

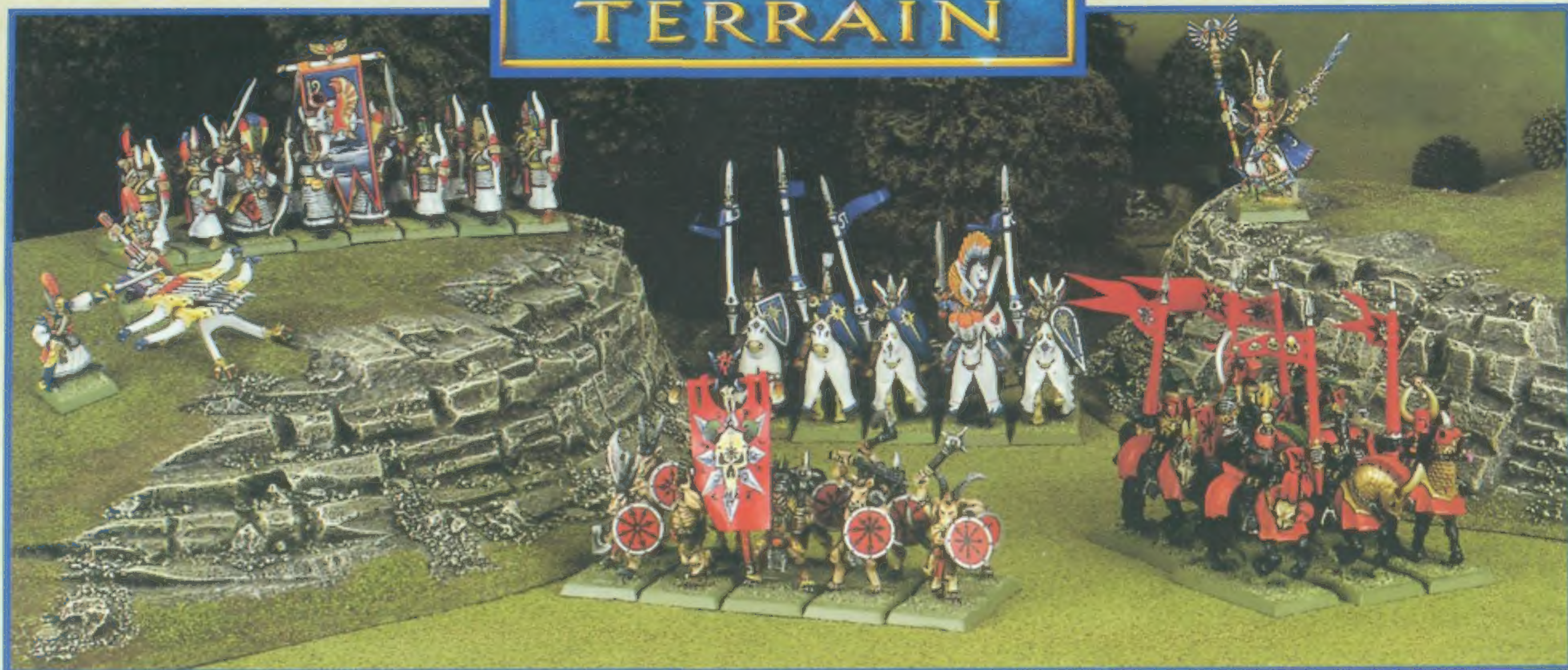
HOW TO MAKE

WARGAMES TERRAIN



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BY NIGEL STILLMAN



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INTRODUCTION



This book is all about how to make terrain for the battlefield, using simple tools, easily found materials and basic techniques. If you've never tried making terrain before, or don't have much experience, start with something simple and as you master the techniques, try something harder. If you are already accomplished at making

terrain, then by trial and error you will develop the ability to create whatever items of scenery you want. This leads on to more advanced approaches to planning scenery and designing battlefields.

You don't need a lot of expensive tools or materials to make terrain. Nearly all the terrain in this book was made from cheap, readily available components, using a few basic tools and a number of straightforward techniques.

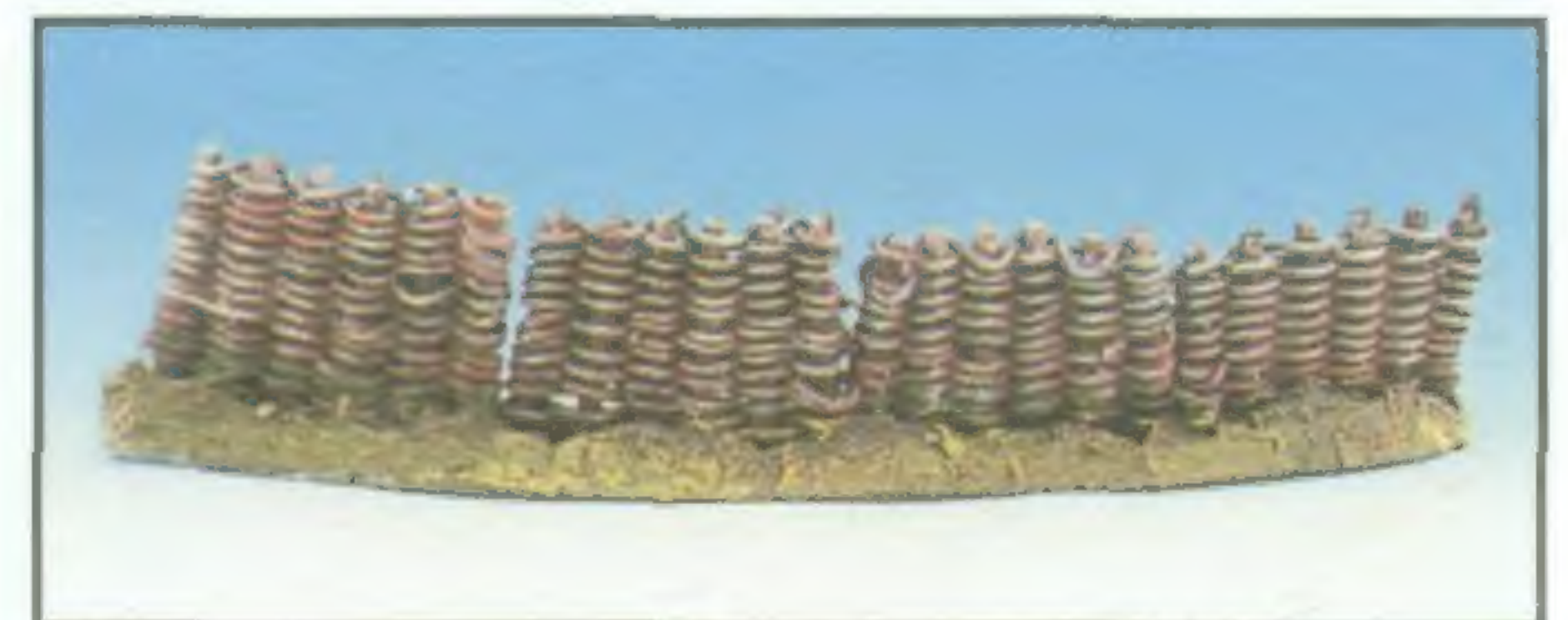


This impressive fantasy cottage was made from cardboard and balsa wood, stuck together with PVA glue.

WHY USE TERRAIN?

Scenery is an important part of any battlefield. If you choose to play your game on a completely flat, open tabletop, don't think that you have got away without using scenery, because you haven't. What you have done is chosen to fight on a flat open plain!

After you have fought every possible opponent and tried every possible tactic on a flat open plain, what next? The answer is make some terrain. With a few items of scenery you can transform this barren open plain into a different battlefield for every game you play. Terrain makes the battlefield interesting!



Nigel is an enthusiastic terrain maker, and turns his hand to all sorts of scenery.

Above: The cornfield is made from a coir doormat.

Left and top right: The wattle stockade and fence were made from wire wrapped round cocktail sticks.



DESIGNING THE BATTLEFIELD

Terrain is an important part of any battlefield. Hills, trees, woods and buildings not only make the wargames table look attractive, but they also provide invaluable cover, give troops different levels to shoot from, or force troops to move through or round specific areas. Terrain can even be incorporated directly into the game - troops could be sent to capture a building, or hold a hill, for example.

COLLECTING TERRAIN

When collecting an army it is useful to have the relevant Warhammer Armies book to hand. Each Armies book concentrates on a particular Warhammer race - Orcs & Goblins, Skaven, High Elves, for example - and contains lots of details about the different troop types as well as a complete army list. Using this information you can start to plan and collect your army.

The same is true for collecting terrain: it is useful to work to a plan. When you have decided roughly what kinds of scenic items you want to make you will know what materials to look for and stash away in your bit box.

A 'terrain list' can be drawn up by looking at the Terrain Generator Chart in Warhammer or the list in Warhammer 40,000.

A terrain list derived from the Warhammer chart looks like this:

A Gently Sloping Hill

The easiest hill to start with might have only one or two steps, or smooth slopes if you prefer. Start with a fairly small oval or round shape. Later on you can experiment with different shaped hills as you add to your terrain collection.

A hill is the most useful item of terrain, and it's a good idea to have several different sizes and shapes of hill to choose from. It is hills that do the most to transform a flat tabletop into a realistic battlefield.

A Wood

You could make a single terrain piece or opt for several small 'clumps' of trees which you can place together in groups with 'paths' in between for moving the troops.

The advantage of having several clumps is that you can vary the size of your woods easily and continue adding to your woods by making more clumps from time to



time. The wood is second only to the hill as the most useful terrain item. Woods on their own can transform a flat table into an interesting battlefield. It is worth making several woods.

A Section of River or Stream

The most useful river section to start with is a curved bend which can be placed to run across the corner of a table. It should have somewhere for troops to cross, like a ford or a bridge. Later on you can add further sections of different shapes without a crossing point. When you have three or four sections, or enough to go across the width of the table, you will have all the sections you need.

An Area of Difficult Ground

This can be a marsh, tangled scrub or boulder strewn ground. You will not really need more than two or three features of this kind in your collection.

A Steep Hill

The easiest steep hill to start with might have three steps, or if you like smooth-sided hills, make a steep cliff along one side. The first hill need only be fairly small in size and simple in shape. Later on you can experiment with different shaped hills featuring whatever crags, cliffs and scree slopes you like.

It is good to have at least one steep hill to add character to the battlefield. If you want to create mountainous battlefields you will need several different sizes and shapes of steep hill. Two steep hills can be placed facing each other to create a mountain pass, gulley or ravine.

Walls, Hedges or Fences

These features are best made in short sections about 10 or 15cm long. This allows them to be placed on the table in different ways to create long boundaries or fields or to go around or between buildings.

Make about three to start with then add more sections as you feel like it. You can mix together walls, fences and hedges when placing terrain. Three sections can easily be all that you will need, but it is always worth making several of such simple and versatile terrain features.

A Single Big Building or Several Small Buildings

Start with a single small, easily made building such as a hut or hovel. Later on you can add more buildings of the same kind, or vary the shape and size slightly. This will give you enough for a village.



Using two steep-sided hills to make a ravine.

When you feel ambitious, tackle a big building, such as a tower or temple. This can be used on its own or as the centrepiece of a village. You won't need more than two or three simple huts or houses, so start experimenting when you have enough for a village. Varied designs can be made by adding two basic houses together to make an 'L'-shaped building or by just making a basic house twice as big or by putting a wall round it. If the model goes horribly wrong, think about changing it into a burnt-out ruin!

An Area of Very Difficult Ground

This can be a patch of boggy ground, a pond or a swamp. You do not really need to make more than one item of this kind to complete your collection of terrain.

TERRAIN FOR WARHAMMER 40,000

A terrain list for Warhammer 40,000 would include many of the same scenic items listed above. Even so, it is fun to interpret them differently and think about the form they might take on the various planets of the 40,000 universe. Warhammer 40,000 is a game with the emphasis on individual models rather than regiments, so models can move over and around items of terrain more easily. Indeed, the models benefit from plenty of small items of cover.

A Gently Sloping Hill

Even for a Warhammer 40,000 battlefield it is still true that a hill is the most useful item of terrain and several hills will transform a flat tabletop into a realistic battlefield. Once again, you can interpret the idea of a hill in several different ways depending on what kind of planets you want to fight your battles on. On a desert world, a hill might be an enormous sand dune or outcrop of smooth weathered rock. On an ice age world, it could be a huge snow drift.



The use of crags, rocks, river sections and trees has created a detailed and complex battlefield for this Warhammer 40,000 conflict.

A Steep Hill

Everything already said about steep hills in the fantasy list above is relevant here as well. The main opportunity for making a futuristic steep hill is in the weirdness of the crags and cliffs. Something volcanic springs to mind!

Walls, Fences, Pipelines

These are just as versatile as items of terrain for the Warhammer 40,000 battlefield as they are for the fantasy battlefield. Fences can be used to create compounds around buildings and pipelines can run across the table, link up industrial buildings or end in sludge pits of effluent!

A Wood

This is where you really have to think about what kind of planets you expect to be fighting your battle on. You could ignore woods altogether and opt for scenery portraying rugged, barren desert worlds or volcanic terrain. Even so, a few clumps of cactus, fungus, tough man-eating plants or stunted trees wouldn't go amiss. If you want to be able to make a jungle landscape, then you will need several clumps of tropical trees.

A Section of River, Stream, Crevasse or Ravine

Just as with the fantasy river or stream, the most useful section to make to start with is still a curved bend • which can be placed to link two table edges. A ford or bridge is not as important and unlikely to be found on most planets. Also, the armies of the 41st millennium have more troops that can sweep across such obstacles.

If you opt for a crevasse or ravine, the ends of the section can be tapered into a point so that the section can be placed anywhere on the table like a big crack in the ground and doesn't have to link up table edges.

To make a ravine just make a river section without the water! Leave the 'river' bed as dry sand, gravel and boulders.

An Area of Difficult Ground

This can be a marsh, tangled scrub, soft sand, boulder strewn ground or craters. Apart from craters, the main difference to the equivalent fantasy item is in the vegetation or the weirdness of the boulders. You might opt for tropical plants, big crystals or stalagmites.

Buildings and Ruins

Start with small, simple items such as space shelters, bunkers or Ork hovels. Experiment by varying the shape and size of the buildings. This will give you enough for a settlement. Think of a theme for a group of buildings such as an industrial complex, for example. Your idea may call for a big building as a centrepiece surrounded by smaller buildings. You could interpret the idea of a group of buildings around a big building as the hull of a crashed spaceship surrounded by engines and other bits of the spaceship which have broken off.

If you want to make some ruins, how about working to the theme of a ruined Imperial colony which has been fought over time and again so that all buildings are reduced to burnt out shells. The advantage of working to a theme is that when you know how to make a building, it's easy to make several more in the same way, and it's fun to experiment with slight variations. Also, any that go wrong can be re-worked as ruined versions of the same kind of building.

An Area of Very Difficult Ground

This might be a patch of boggy ground, a slime-pit full of industrial effluent, a swamp or a multitude of other possibilities in the vastness of the Warhammer 40,000 universe. While you might not want more than one such item of difficult terrain in a fantasy battle, in a Warhammer 40,000 battle these items are more useful, especially if they are small and grouped together in clusters.

So, let your imagination go wild! Things that spring to mind are stalagmites, boulders, wrecked vehicles, stacks of oil drums, lava pits and sludge ponds.

COLLECTING TERRAIN TO A THEME

Whether you are making Warhammer or Warhammer 40,000 terrain, there is already a theme running through your collection of scenic items. The broad theme in each case is either a fantasy landscape or a science fiction landscape, perhaps set on other planets.

Why not take the idea of a theme for your terrain a stage further and make scenic items specially go with your army. You can build up your collection of terrain as you build your army, so that the two blend into a single great project.

If you are collecting a High Elf army for example, think about the High Elf realm of Ulthuan. What is the landscape like in Ulthuan? Are the forests mainly oak trees or pine trees? What are Elf houses like and how can the basic method for making a building be adapted to make an Elf house? Does the army belong to a mountainous realm, and if so, why not make most of your hills as steep hills with crags and cliffs?

If you follow a plan like this, and introduce the theme of your army into your terrain, when the project is finished, you will have created 'Ulthuan' or wherever else you like. Then, when one of your regular opponents turns up for a game with his Orc army, you say "Welcome to Ulthuan!". Anyone who fights your army on your table must have invaded the home of the High Elves and so the battle is fought in the landscape found in your realm!

If you encourage your opponents to do the same thing, then you will find yourself fighting in the Dwarf mountains or the Wood Elf forests when you play them on their home table. If you meet an opponent for a game on neutral ground, or perhaps if you both want a slightly different battlefield for a change, you can mix up items from each of your collections.

Now you are fighting on the frontiers of your two realms, or in a wilderness region between them. On this battlefield the landscape blends from one type to another, so if Wood Elves are fighting Dwarfs, the landscape must be the foothills of the mountains, where woods and steep hills occur together.

Designing the Battlefield to a Theme

When setting up the battlefield, give some thought to where the battle is being fought. Battles don't just happen in the middle of nowhere! Perhaps one player's realm has been invaded by the opposing player's army. Perhaps the armies clash on the frontier, or encounter each other in some faraway land. Maybe they are both rivals on the same quest, perhaps the search for a magic item.

Just a few moments' thought and discussion will set the scene, then you will have a clear idea of the kind of landscape in which the battle is fought. When choosing and placing terrain, both players keep in mind where the battle is being fought and try to create the appropriate

landscape. So, if you both come to the conclusion that the battle occurs in the Chaos wastes, leave out the village! If generating the terrain randomly, re-roll the score that generates a village. If the battle occurs in the mountains, then consider having at least half the hills on the table as steep hills.

Supposing you both agree that the battle takes place on an Imperial planet that has been devastated by alien invaders. You both want to fight among buildings. We can already say two important facts about this planet: firstly, all the buildings will be Imperial style buildings and secondly, most of them will be in ruins! So, we end up with a battlefield featuring a group of several ruined Imperial buildings. The objective of each side is suddenly made clear: capture the ruined settlement, claim the city for the Emperor!

Perhaps you both decide to fight a battle on a feral world, but fancy mixing buildings and tropical forest. A little bit of thought and imagination can make the battlefield believable. Once again, we can deduce two facts about this world: firstly, it's feral, which means 'untamed wilderness' so there can't be much settlement on it, if any. Maybe there was once, but now the ruins are all overgrown. Secondly, why are the two armies fighting here - there must be a reason. Perhaps they are looking for something?

So we come to the main theme of the battlefield! The two armies have met at their final objective, a ruined settlement or crashed spaceship lost in the middle of the jungle on a feral world, and there is something very important in the ruins or the wreckage! The battlefield is set up with this scene in mind. The armies must fight their way through the jungle to the central clearing, then fight in the ruins or the wreckage. Thus there are three zones of terrain on this battlefield: a central open area, a group of ruins or wreckage in the middle of this zone and woods scattered all around the edges of the table. The theme has provided the ideal battlefield. No need to generate terrain randomly, or set it up symmetrically as in a competition, or place it in chequer-board fashion. None of these approaches would have produced such an interesting or challenging battlefield.



The gate and the tower were made specially to go with this High Elf army.

MODELLING TOOLS

The modelling tools described on this page are all you'll need to get started. Some of them - like scissors and pencils - you'll probably already have at your disposal. Of all these tools, a good quality modelling knife is the most essential.

MODELLING KNIFE



Be very careful when you are using a modelling knife. The best kind of knife is the type with a retractable blade so that only a short amount of angled blade appears out of the handle. When you're not using the knife, the blade can be retracted safely into the handle. Always cut away from you and never get your fingers in the way. Use the knife by scoring along the edge of a steel ruler to ensure a straight cut. Cut by scoring several times pressing lightly until the material is cut through.

On the whole it is better to limit the use of the knife to a minimum and avoid using it at all if possible. Scissors are safer and more easily controlled. There is not much that you need a knife for except cutting neat holes through cardboard for windows and doors or for cutting card that is too thick for the scissors.

STEEL RULER

Steel rulers can be bought in hardware stores. When using a knife, cut against a steel ruler rather than a plastic or wooden one or the knife will shave the edge of the ruler spoiling the straight edge. The ruler is also used for measuring and drawing shapes on cardboard for making buildings.



PENCILS

To make a good model, especially model buildings or stepped hills, you will need to measure and mark the cardboard. You will often want to draw the sides of buildings onto cardboard before cutting out the shapes. Pencil is best for this, because ink from biro and felt pens will sometimes stain and seep through the painted surface of the model after it is finished, spoiling the effect.



SCISSORS

You can use scissors for most of the cutting jobs in making scenery if you are using thin cardboard as your main material. The best kind of scissors are those which are big enough to cut cardboard but not so big as to make it difficult to cut detailed shapes.



MIXING POTS

Yoghurt pots are ideal for holding water and for mixing up PVA glue and sand, or mixing quantities of paint. You could also use the tops of old aerosols.



Use mixing pots to shake flock or sand over surfaces to be textured in this way.

PAINT BRUSHES

You will need several different sizes of paint brushes. The small sizes used for painting miniatures are fine for the later detailed painting of finished scenery, but in the earlier stages you will need big brushes which would be too big for miniature painting.

These big brushes are used for painting PVA glue, base colours such as green and drybrushing over large areas and rough surfaces.

Cheap hard-wearing bristly brushes are best. Brushes used for painting PVA need to be washed thoroughly after use or the bristles will dry into a solid mass. Brushes used for this kind of work will inevitably wear out quickly.



A big brush like this is useful for painting terrain.



OTHER USEFUL TOOLS

While not essential, the tools described below can prove very useful, especially for more ambitious projects.



Pliers



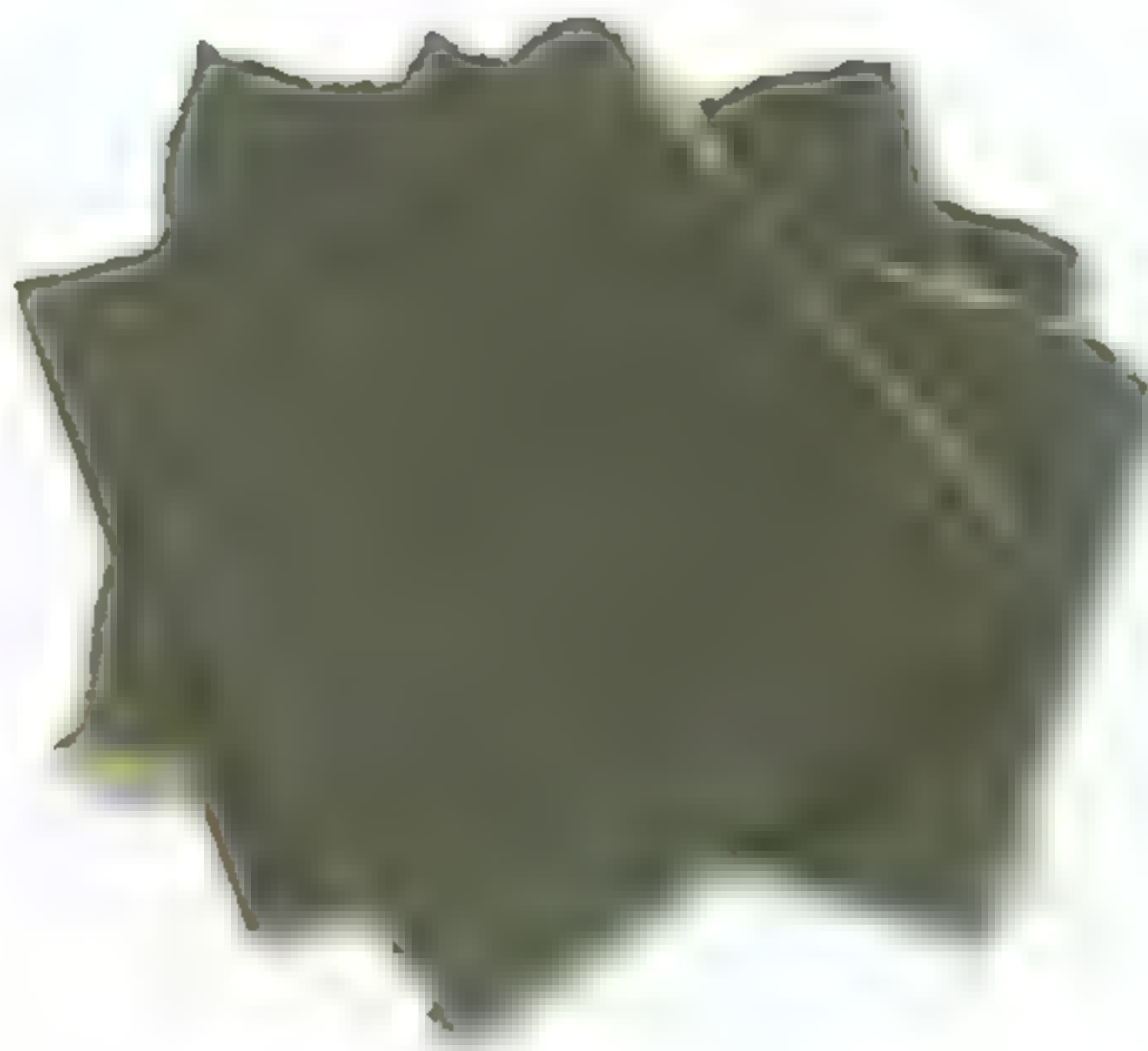
Wire clippers

PLIERS AND WIRE CLIPPERS

You will need these if you want to use wire. Some pliers are able to cut wire as well as bend it. These have a wire-clipper built into the design and so are a good all round tool. Otherwise you will need a small pair of wire clippers. It is virtually impossible to cut wire with scissors unless it is very thin and trying to do so will often blunt or ruin them.

SANDPAPER

Sandpaper comes in sheets and is quite cheap to buy. There are various grades ranging from coarse to fine. Any of these will do for smoothing down scenery. Coarse grades are probably better because fine grades soon clog up with plaster dust or sawdust.



CLOTHES PEGS

Clothes pegs are useful when making cardboard buildings. Use the pegs to hold the card in position temporarily while the glue dries.

MODELLING VICE OR CLAMPS

A small modelling vice or woodworking clamps are useful for holding materials while they are being sawn. You can also use them to hold items together while the glue dries. Vices and clamps can be bought from hardware stores.



SPATULA

A spatula for applying PVA glue and smoothing plaster or modelling clay is very useful. Such tools can be bought from art shops or toy shops which sell modelling clay. A flat lolly-stick provides a good spatula.

MODELLING SAW

Small, handy modelling saws can be bought from model shops and hardware stores. The saw is only really useful for sawing balsa wood or twigs and only the smallest teeth will do the job neatly.



MODELLING TIP



If you're sanding a flat surface, or want to sand a large area, you'll find a sanding block useful. A sanding block is simply a flat-sided piece of wood or cork, with a piece of sandpaper wrapped round it. There's no need to glue the sand paper to the block, just hold it on with your fingers as you work.

MATERIALS

There are a number of essential materials for making terrain - cardboard, glue, flock, filler etc, but as you get involved in modelling you'll quickly discover that almost anything can be used. In fact, finding new uses for ordinary household items is an enjoyable and rewarding aspect of making terrain.

Ready-made model terrain suitable for Warhammer or Warhammer 40,000 is not easy to find, so most of the scenery you use in your battles you will have to make yourself. Making your own scenery is good fun, and is as much part of the hobby as painting miniatures.

Every terrain feature that you make yourself can be specifically designed to suit your games. This gives you the opportunity to tailor your terrain to the size of your table, or to make special pieces to fit in with your armies. It benefits Wood Elf armies to have access to plenty of woods, for example.

This section describes what materials you can make terrain out of. We've concentrated on materials



that are readily available, cheap and easy to use. They will give you virtually the same results as specialist modelling materials, and will often be better and stronger.

The studio terrain pieces are made first and foremost to look impressive in photographs. They are not strong enough to survive extensive gaming, and often need to be repaired after they've been used for playtesting.



When you make your own terrain for gaming it's best to construct it from simple, strong materials rather than specialist modelling materials. As you make more and more terrain, you'll make your own discoveries and develop your own ways of doing things.

Here is a selection of the best and most easily found materials for scenery making. Each material is described, and we tell you where to find it, how to use it, what you can make with it and its advantages and disadvantages.

THIN CARDBOARD

Thin cardboard is readily available in all kinds of packaging, such as cereal packets. You can also buy cardboard sheets of various thicknesses from art shops, large stationers and other shops that sell paper, pens etc.

Thin card can be cut with scissors, and is easy to glue and paint. Thin card is quite strong enough to make small model buildings. It can also be cut into all kinds of shapes and strips which can be stuck on model buildings to make planks, doors, tiles, hatches and so on.



Cereal packets are ideal for modelling, and are particularly suitable for making tiles, planks and hatches for model buildings.



Thick brown cardboard is very useful for modelling. Use it for making bases, rivers, hills, and many other things. Best of all, it's free!



This cottage was made entirely from thin cardboard. Read about how to make it on page 44.

THICK CARDBOARD

The best kind of card to use for modelling, especially making bases, is the thick cardboard that brown boxes are made from. This is the sort that has one or two layers of corrugated cardboard in its thickness. It is easily cut with scissors or a modelling knife.

The best place to get cardboard boxes from is supermarkets, which usually have piles of empty boxes by the checkouts. The boxes themselves can be quite useful for storing terrain pieces in or as a tray for modelling materials and models which are not yet completed.

Another source of good quality card boxes is packing boxes for electrical goods such as televisions, videos, fridges etc.

The sides and base of the box can be cut out to provide panels of thick cardboard that can be used as bases for models, terrain sections such as rivers, or it can be built up in layers to create hills. If you use cardboard to make hills, it is easy to prick holes in the layers to 'plant' trees in them.

Cardboard can also be used to make big, thick-walled buildings such as towers and fortress walls.

GLUE

PVA GLUE

PVA is a white glue which can be applied directly from the nozzle or be diluted with water and painted on with a paintbrush. It is often called wood glue because it is mainly used for bonding wood. It dries clear and takes several hours to dry completely.

PVA glue can be bought from most DIY supermarkets, hardware stores and from Games Workshop stores. It can be used for an amazing variety of tasks, will stick most things and is very strong. PVA is the main type of glue for making terrain.



OTHER GLUES

There are various other glues, such as superglue, which are used more for sticking together miniatures than for making terrain. Their main advantage over PVA for making scenery is that they dry rapidly, but the job will often require large quantities. For making terrain, these glues are best used for the detailed work rather than the basic construction.



BALSA WOOD

Balsa wood is traditionally a popular modelling material because it is light, easily cut and sawn with modelling knife or modelling saw and easily glued with any kind of modelling glue. Balsa wood can be found in most model shops and is used for making model aircraft because it is so light. The bundles of offcuts which are sold in many model shops are good value and contain assorted shapes and sizes. Balsa wood is most useful for making buildings, especially timber buildings, bridges and fences. It can be filed into shape and can be painted and drybrushed to good effect.



EXPANDED POLYSTYRENE

Chunks of expanded polystyrene are commonly used to package large electrical appliances such as televisions and fridges. Large, flat sheets of expanded polystyrene can be bought from hardware stores and do-it-yourself supermarkets.

Polystyrene is lightweight and fairly easy to cut with a modelling knife. Its main use is for building up the layers of hills.

However, polystyrene can be messy to work with, and is not as sturdy as other materials. If you want to use polystyrene, you will have to be careful to use only water-based paints and glues, because other sorts of paint and glue can melt it. Thick corrugated cardboard is a good alternative to polystyrene.

Large sheets of polystyrene can be bought from DIY supermarkets.



Chunks of polystyrene come in just as useful as large flat sheets.

COCKTAIL STICKS

These can be bought in supermarkets in packs of about fifty which is more than enough. Matchsticks could also be used for the same jobs, but cocktail sticks are better because they are pointed like miniature stakes and can easily be stuck into cardboard, cork tiles or polystyrene. Cocktail sticks can be used for fences, stakes, logs and various details on models.



CORK TILES

Cork tiles can be found in hardware stores and DIY supermarkets. They are sold in packs of about four or nine or depending on thickness. The thickest ones are about 1 cm thick and the thin ones are about 4mm thick. The tiles are about 30cm square, and can be smooth or coarse surfaced.

The advantage of using cork tiles is that they are easy to cut with a modelling knife or even with scissors in the case of the thinner tiles. The cut edges are very neat, so the tile can be cut into various shapes very accurately.

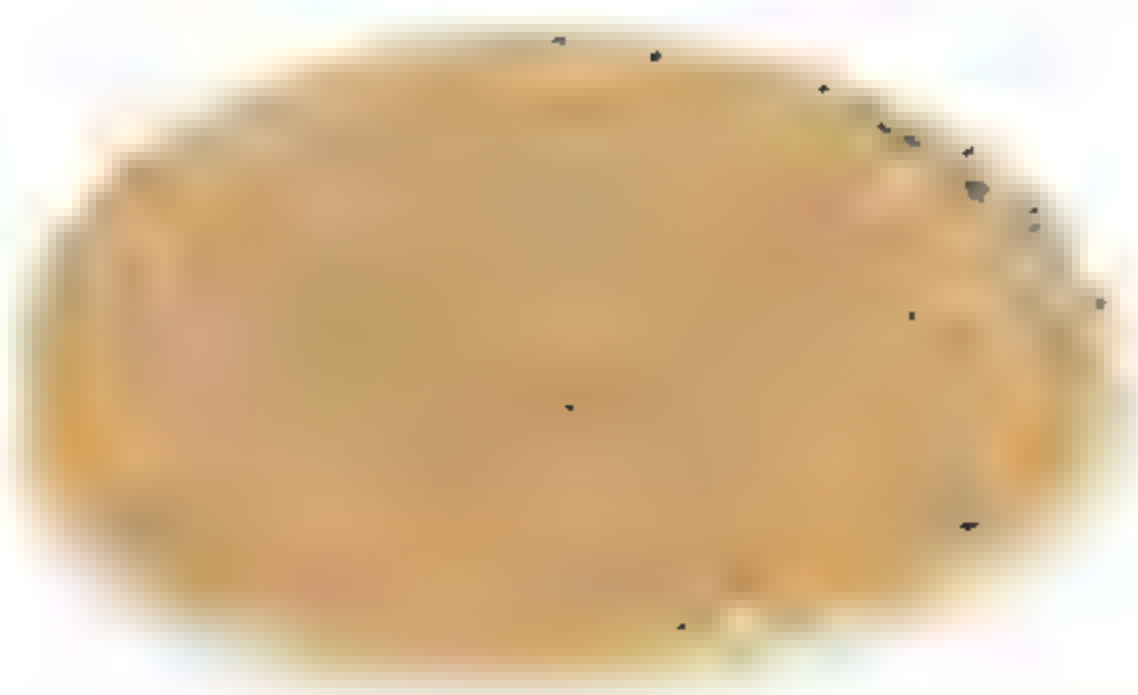
Cork tiles can be glued with any kind of glue and holes can be pricked into them for trees. The tiles can be glued together in layers to make hills that will be stronger and better than cardboard or polystyrene. Thick tiles can be used for the walls of big buildings such as fortresses and the battlements, gates and windows can be cut through the thickness of the tile. Thick tiles are also good for bases for models and hills or woods.



Cocktail sticks were used extensively on this Warhammer 40,000 fortified tower.



This sort of sand can be bought from pet shops, and is used for the bottom of bird cages.



SAND

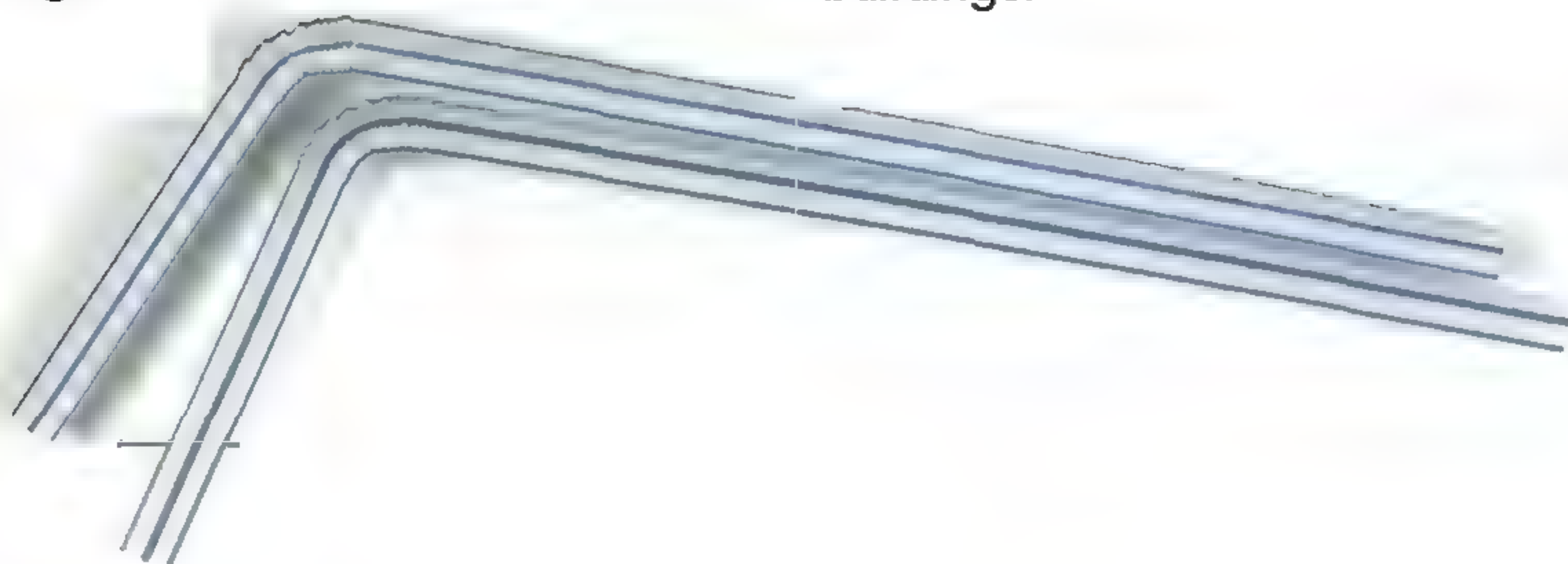
Sand is readily available from pet shops where it sold for fish tanks and bird cages. There are various types and grades but the most useful is shell sand, which is pale yellow with fragments of shell in it. Similar sand can be found on beaches. Gritty sand is also useful because it gives a very rough texture and drybrushes very well.

Sand is used in combination with PVA glue to texture bases and flat surfaces. PVA is painted onto a surface and sand is scattered over the sand to create a rough texture. When the glue is dry, the sand can be painted and drybrushed to look like grass, desert, snow or rough concrete. Sand can also be mixed with PVA glue to make a thick, viscous paste. This can be spread with a spatula over built up cardboard, cork tile or polystyrene to create a smooth surface for gently sloping hills.

This paste can also be used like filler for a variety of tasks, such as building up the banks of river sections or the edges of craters. If small stones and bits of wood are mixed into the paste it will dry into a realistic-looking rubble to pile up around the walls of ruined buildings and craters.

STRAWS

Drinking straws can be bought in packs very cheaply from supermarkets and kitchen shops. They can be stuck in rows on the outside of buildings to represent logs or as pipes on futuristic buildings.



MODELLING CLAY

This kind of clay dries hard when it is left exposed to the air at room temperature. There are several different kinds (such as DAS) which can be bought in art, toy and model shops. Clay as used for making pottery is no use for making terrain since it will never dry properly and crumbles.

Modelling clay can be shaped, smoothed and scored with your fingers or modelling tools or even the end of a paintbrush to get many interesting shapes, surfaces and effects. You can use it to shape boulders, crude ruined walls, carved stone monoliths, tree trunks, stone walls, banks of rivers, slopes or crags on hillsides, thatched roofs, craters, ruts on roads and many other things.

Modelling clay dries hard if left in a dry place for a day or so. Try to avoid letting it dry too quickly or it may crack. When completely dry the clay can be carved, filed or smoothed down with sandpaper.

STICKY TAPE



The best kind of tape for modelling work is masking tape available from hardware shops and stationers. It is mainly useful for holding things together while they glue, but can be used instead of glue to construct cardboard buildings.

CARDBOARD TUBES

Cardboard tubes can be scavenged from packaging, the most readily available being toilet rolls and kitchen rolls. Biscuits, crisps and other foods often come in thicker tubes.

Cardboard tubes provide the basic shape for a wide range of futuristic buildings. Fuel tanks, oil refineries, bunkers and crashed spaceships all spring to mind and you can let your imagination run riot.

Tubes could also be used for round towers whether these are part of futuristic or fantasy buildings. If a tube is cut into sections these can become the circular walls of primitive huts. A tube cut lengthways becomes a long canopy suitable for a bunker, hangar or tunnel. Narrow tubes can be used as huge pipes linking buildings together.



Plastic straws are ideal for pipes in Warhammer 40,000 terrain.

READY MIXED FILLER

Ready mixed filler is used for filling cracks in walls, ceilings, steps etc. It can be bought in hardware shops and DIY supermarkets in tubs. Ready mixed stuff is better and more convenient than mixing your own from plaster powder and far less messy. Usually the quality of the ready-mix is finer and better for modelling. You can also get it in squeeze tubes.

Filler is easily applied with a spatula or strip of cardboard and can be smoothed over rough surfaces or built up layers of cardboard, cork or polystyrene to create hillsides. It can also be built up into river banks or crater edges.



It dries within a few hours if left in a dry place and can be painted or textured with flock or sand and PVA glue.

CORKS

Corks as used in bottles can be bought from chemists where they are sold for in bags for home brewing. Corks can be used for pillars and columns in buildings and ruins, or as oil drums.

PLASTICENE

Plasticene can be bought from toy shops and art shops in quite big slabs. It can be used to build up hill slopes, river banks and craters and can be given a hard surface by painting it with PVA or covering it with PVA and sand mixture. Unlike modelling clay it will always remain soft under the surface.

FLOCK



Also known as scatter, flock is fine coloured sawdust. It is sold in various colours, usually shades of green, brown or yellow, of which green is the most useful. You can buy flock from Games Workshop stores and most model shops, especially model railway shops.

Flock is used to cover terrain with a natural texture representing grass or earth. To cover a surface with flock, first paint the same colour as the flock so that the original colour of the terrain does not show

through the flock. When the paint is dry, paint the surface with PVA glue then scatter flock over it.

The model should be placed on newspaper before scattering the flock to avoid a mess. It will also make it easier to retrieve the surplus flock to use again. When the glue is dry shake or gently tap the model to make the excess flock fall off, leaving you with a textured, coloured surface.

More than one layer of flock can be used to ensure complete coverage and diluted PVA can be gently painted over the flock to stop it gradually rubbing off as the scenery is used.

Instead of flock, you could use PVA scattered with sand, paint it, then drybrush it in a lighter shade. This will give you a similar result to flock, but is more hard wearing.

The best use of flock is for covering the bases and hills. You can also use it for foliage on trees and hedges. A very basic tree or hedge can be made by cutting a piece of sponge or polystyrene into the shape of tree and painting it dark green, black or brown. When the paint is dry, paint it with PVA and cover it with flock. When it's dry, the flock will look like leaves. Sand is not very good for this, though you could always try fine sawdust and paint it green afterwards.

Putting flock in an upturned box lid keeps it tidy when you're using it.



Green flock



Brown flock



Electrostatic grass

Electrostatic grass can be used for adding grassy-looking detail to terrain bases.

PAINT

Making terrain uses up large quantities of paint. The colours that you will use most are green in various shades, brown or sandy yellow. Since it is also a good idea to undercoat scenery to completely disguise the colour of the cardboard etc so that the final colours are bright, you will need a lot of white or black paint as well.

The best paint to use is acrylic because it is soluble in water, will cover almost anything without melting it or reacting with the glue or other materials. Acrylic also gives a very tough surface that does not rub off easily or scuff off rough surfaces. Citadel paints are all acrylics of this kind.

One way to obtain a large quantity of green paint for painting a gaming table or huge piece of terrain is the method we use. Take a pot of Goblin Green paint into your local hardware superstore and



ask the staff to mix you a pot of emulsion paint (preferably water soluble) to the same shade as the Goblin Green. Most stores of this kind have a machine for mixing special colours to order and will know what to do. Alternatively, you could look for a premixed shade of emulsion that is approximately the right colour.

TWIGS

Twigs can be picked up virtually anywhere. the best twigs are the most twisted and gnarled ones that look like miniature tree trunks. These can be used as trunks for model trees, dead trees, fallen trees, piles of logs or even rough and primitive timber beams for huts, fences and bridges.



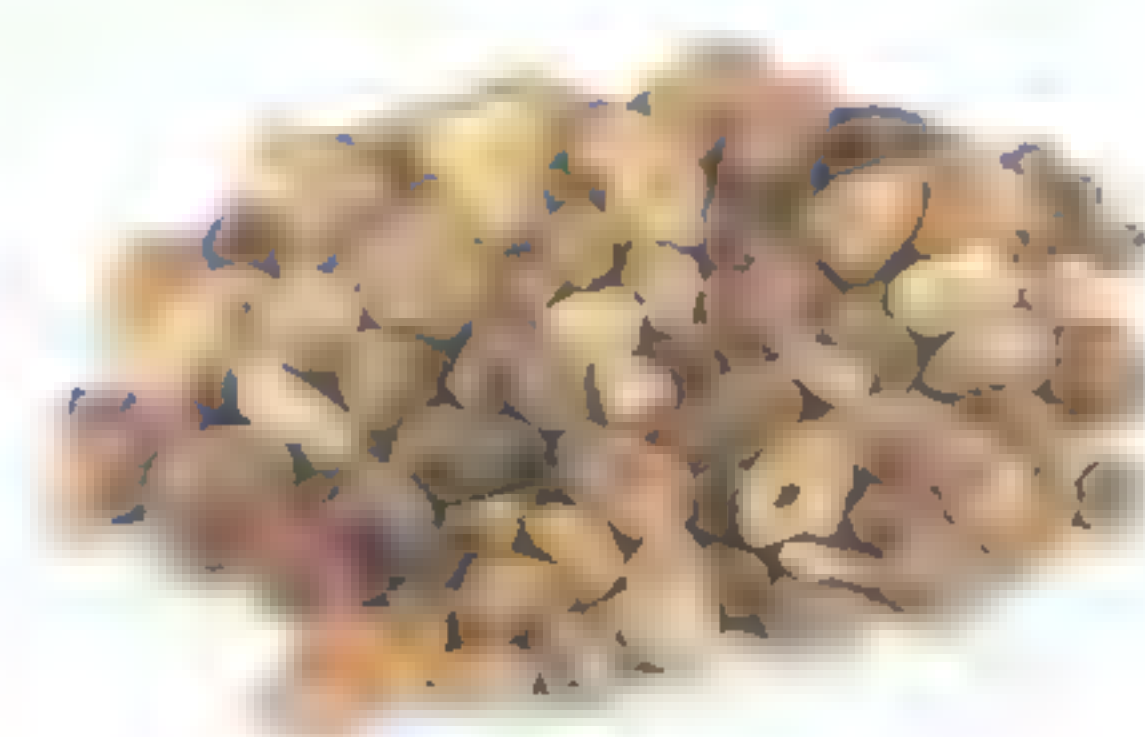
Spray paint is perfect for painting large areas like hills quickly. Do not use spray paint on polystyrene as the solvents in the paint will melt the polystyrene.



The Citadel Colour Paint Set is an ideal way to buy your first paints. The box contains ten pots of water soluble paint, a brush, two Citadel miniatures, and the tray incorporates a handy mixing palette.

SMALL STONES AND PEBBLES

Pebbles and small stones can be bought in bags from pet shops where they are sold for aquariums, or just found in the garden. The best stones are rough, irregular ones that look most like rocks rather than smooth round ones. These can be stuck randomly on scenery to look like rocks and boulders and often look better when painted and drybrushed.



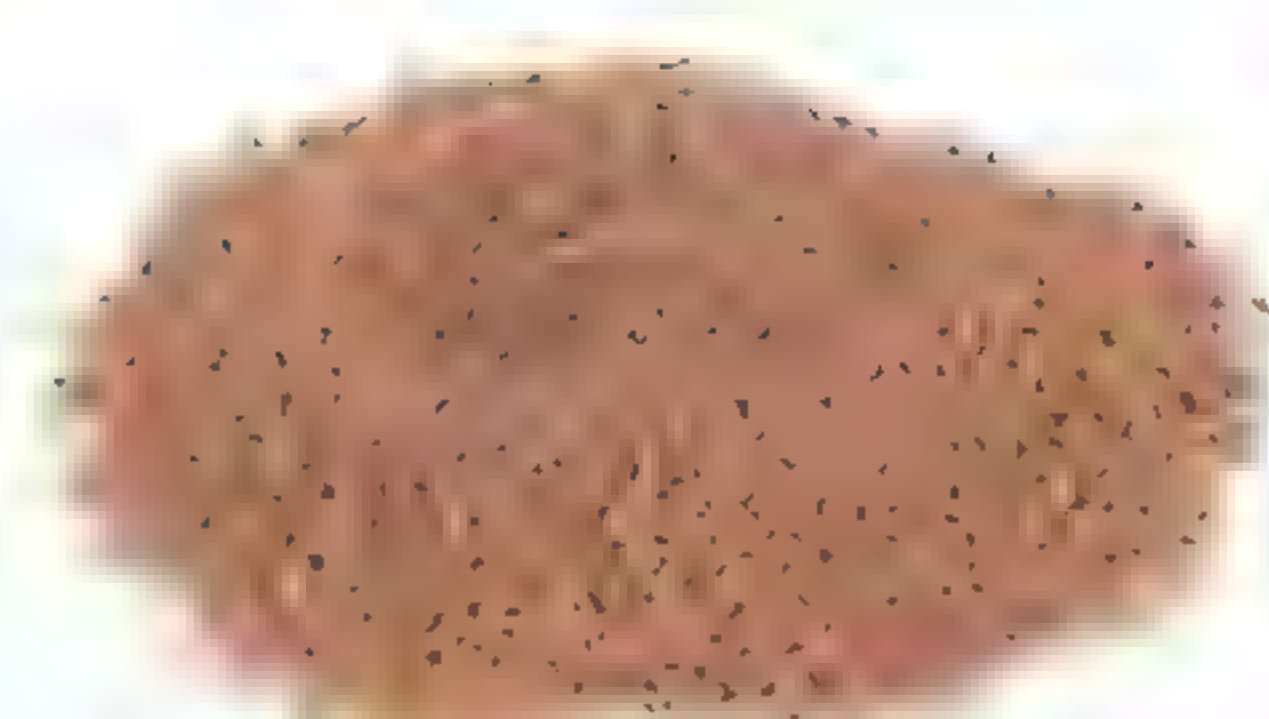
Gravel



Coral sand



This clump of rocks was made from real stones painted with texture paint. The base has been textured with sand and flock.



Granulated cork



TREES

Trees can be made from scratch but this can be quite time-consuming. It is certainly worth trying though, and the trees which are most likely to be successful are tropical types such as palm trees, outsize ferns and huge plants with broad leaves which can be cut out of paper.

By far the quickest and best solution is to buy ready-made model trees such as those sold in Games Workshop stores. They have a wire trunk which can be stuck into a cardboard, polystyrene or cork base, so a hill made up of layers of these can be covered in trees to be given an impressive wooded slope.

Ready-made trees come in all different sizes, shapes and shades of green, from tiny round bushes to tall pine trees.

THICK STRING

Thick string or rope can be bought in hardware stores and stationers. The strands are thicker than the hairs of a paintbrush and are usually creamy-white in colour. The best sort of string is about 1 centimetre thick.

Thick string can be cut into short sections about 2.5cm long and unravelled to create tufts of grass. Dip the end of the tuft in glue and stick it on the scenery. You will need to use very tacky glue for this or do not unravel the string until after the tuft is firmly glued down. Paint the tufts green when they are dry and they will look like big tufts of long grass. They are especially effective between rocks and around the bases of trees and fences.

Bristles from old brushes also make good reeds and patches of tall grass.

Thick seisal string can be frayed and used for grass and reeds.



PLASTIC SPRUE

Plastic sprue is the rods and frame of plastic which comes with a box of plastic models. When you break off the models and parts off the plastic kit, the sprue is what's left behind. Don't throw this away! Instead, look at the sprue to see whether there are any bits that can be used for making terrain. Short lengths of plastic sprue can look like timber posts, iron girders or metal pipes. When painted up, these can be used to add detail to buildings and ruins.

THIN WIRE

Wire can be bought in hardware stores and gardening shops. A pack of fuse wire is a good start, as they supply you with several thicknesses of wire.

Wire must be cut with a pair of wire cutters, or pliers that can cut wire. Do not use scissors or you will ruin them.

Wire is useful for detailed work such as making tropical trees, wicker fences, barbed wire entanglements and wires on futuristic buildings.



THE BIT BOX

Keen modellers always have a bit box - a box in which they keep all the useful 'bits' they have accumulated. Useful spare 'bits' of various materials and bits of models can be kept in the bit box until needed. Whenever you find something you think might come in useful one day - put it in your bit box!



SAFETY

Modelling is not a dangerous hobby, but we suggest you read the precautionary advice below. So long as you are careful and sensible you shouldn't have any problems.

USING KNIVES

You can use scissors for most of the cutting jobs in making scenery if you're using thin cardboard as your main material. The best kind of scissors are ones that are big enough to cut cardboard but not so big as to make it difficult to cut detailed shapes.

For more detailed work it is best to use a modelling knife. The best kind of knife is the sort that has a retractable blade so it can be stored safely when not in use.

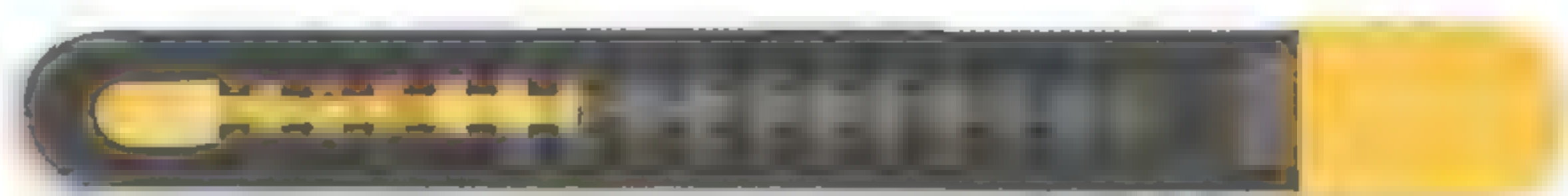
When using a knife, remember to make all cuts away from yourself, so if the knife slips you don't cut your fingers.

Cut by scoring several times, pressing lightly until the material is cut through. Do not press too hard on the blade or it may snap, slip or cut through into the table.

Blunt blades are more dangerous than sharp ones, so change your knife's blade regularly, and dispose of old blades carefully.

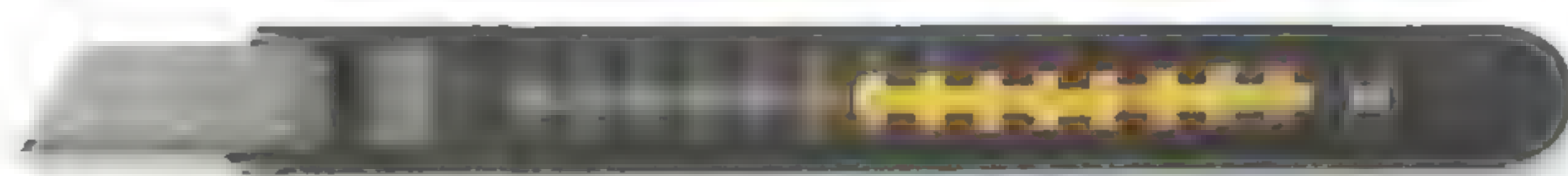
Storage

If you use modelling knives, or any other potentially dangerous modelling equipment, store it safely somewhere when you're not using it.



When not in use, the knife is stored with its cap on.

When in use, the cap is taken off and the blade extended.



USING AEROSOLS

There is no danger in using aerosols provided you follow a few basic precautions.

Read the instructions on the can and follow them while you use it. Before use, shake the can thoroughly.

Spray the model from a distance of about 30-40cm. Several thin coats are better than one thick coat.



Never use an aerosol near a naked flame.

Where to Spray

Always spray outside, or in a well-ventilated undercover site like a garage or a car port.

Place plenty of newspaper on the ground before you spray so you don't get paint on the floor. Alternatively, place a large cardboard box on its side and spray your models inside it.

USING GLUE

Be careful when using glue, and read the instructions on the packaging.

Keep the cap on glue when you're not using it. This will stop the glue drying out, and prevent any spillage if you accidentally knock it over.

If you are gluing polystyrene, only ever use PVA glue, as other types of glue will melt it. See page 71 for more tips about working with polystyrene.



Spraying into a cardboard box helps stop the paint getting all over the place.

Storage

Do not store aerosol cans in a hot place, or somewhere where they could become hot - like on a **windowsill**.

Dispose of empty aerosol cans responsibly - never throw them on a fire.

THE WORK AREA

Though you can do your modelling work anywhere, it's best to have a permanent area that you can use whenever you like, and where you can safely leave your equipment when you're not using it. A table next to a window is ideal, and you'll find it helpful to have some shelves nearby that you can use for storage.

If you don't have a special modelling area, it doesn't matter, you can use any suitable table, but you will have to clear away all your stuff after each modelling session.

If you're using the kitchen table or the dining room table, make sure it's well protected before you start work. Lots of newspaper will protect the table against minor spillages and accidents. If you're planning to do any cutting with a knife, you will need to use a piece of wood or a cutting board to protect the table's surface.

There are a few things you'll find handy to have for your work area such as newspaper, kitchen paper, a cutting mat or board and a table light, if you planning to work in the evenings.

STURDY TABLE

You will need to work at a fairly sturdy table, desk or bench. It should be big enough for you to spread out your tools and models comfortably.

NEWSPAPER

You will need plenty of newspaper to spread out over the working area to avoid making a mess when painting, gluing, scattering sand and flock, sawing and sandpapering.

TRAY

It is a good idea to have a tray to keep your tools, materials and half-finished models on. This enables you to keep things up together when you finish a session of modelling and have to pack up.

Bits of modelling material can be swept into the tray to avoid making a mess and some messy jobs can be done in the tray to catch the sawdust, excess flock and other bits.

CUTTING BOARD

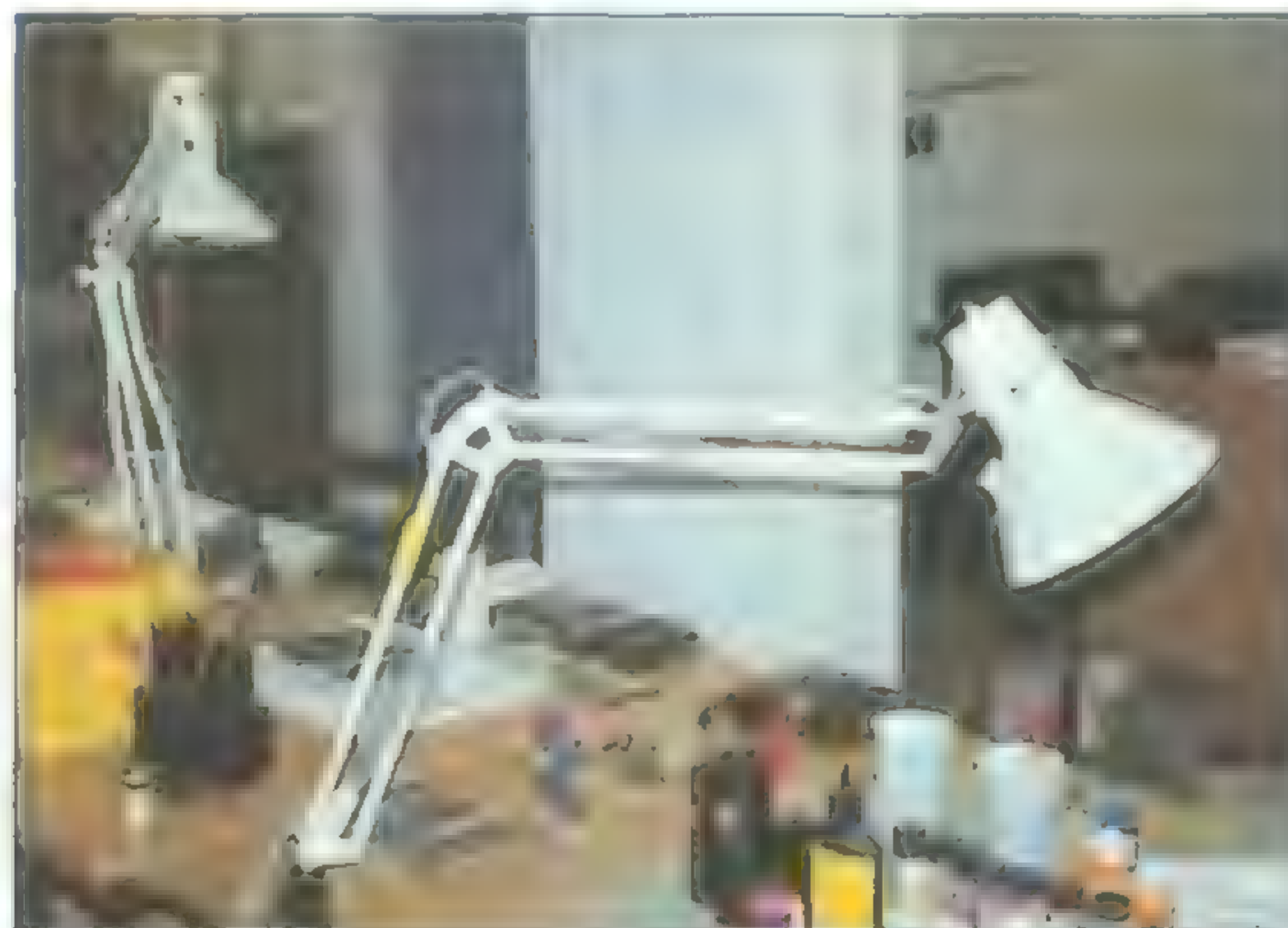
A thick, flat piece of wood is useful to saw and cut on. An old breadboard would be suitable, for instance. The modelling material can be held down firmly on the board to be cut accurately and safely without scratching the table or desk.

KITCHEN PAPER

A roll of kitchen paper is endlessly useful for cleaning and drying things, and mopping up the odd accident. Paper tissues will also do, but aren't as strong or as absorbent.

LIGHTING

Good lighting is essential for all modelling and painting work. Natural daylight is best, so if you can position your work near a window so much the better. If you can't work near a window, or want to work in the evenings or at night, you will need a suitable light source to illuminate your work. Anglepoise lamps are ideal, and come in a variety of shapes and sizes.



Anglepoise lights like these are great for modelling and painting. Most are free standing, but you can also buy lights that clamp directly onto the table, like the ones pictured above. This gives you more room on the table, and means there's no chance of knocking the lamp over.

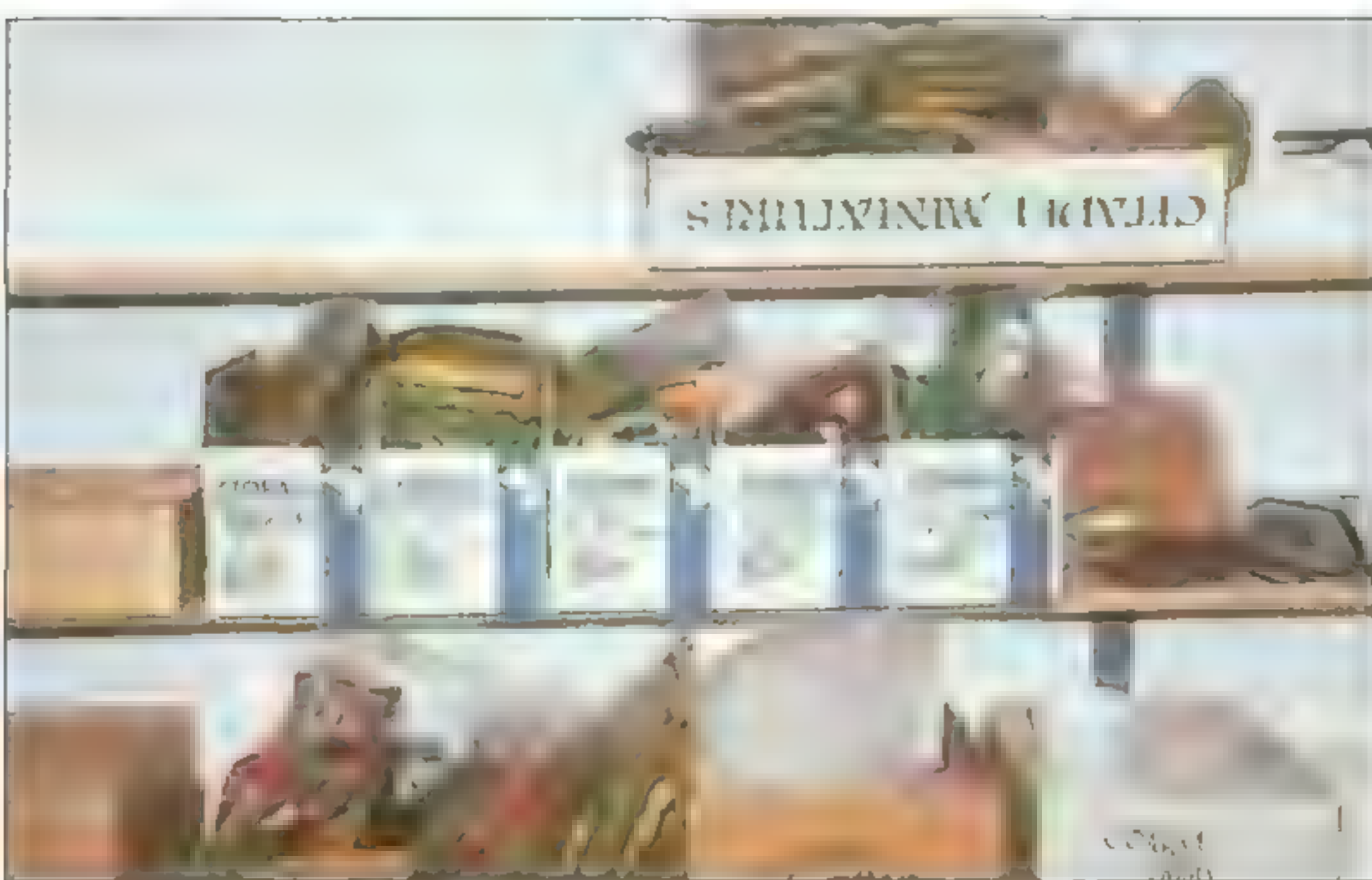
Daylight bulbs cast a light that is almost identical to daylight, and won't distort colours the way normal lightbulbs do. Although they are a little more expensive than standard lightbulbs, they are excellent for painting and modelling.



Owen Branham inspects his latest piece of terrain.



Owen does most of his modelling at this desk. Note the tough green cutting mat that protects the table and gives a solid surface to cut on.



Shelves on the walls round Owen's and Mike's working area keep all their materials tidy and to hand.



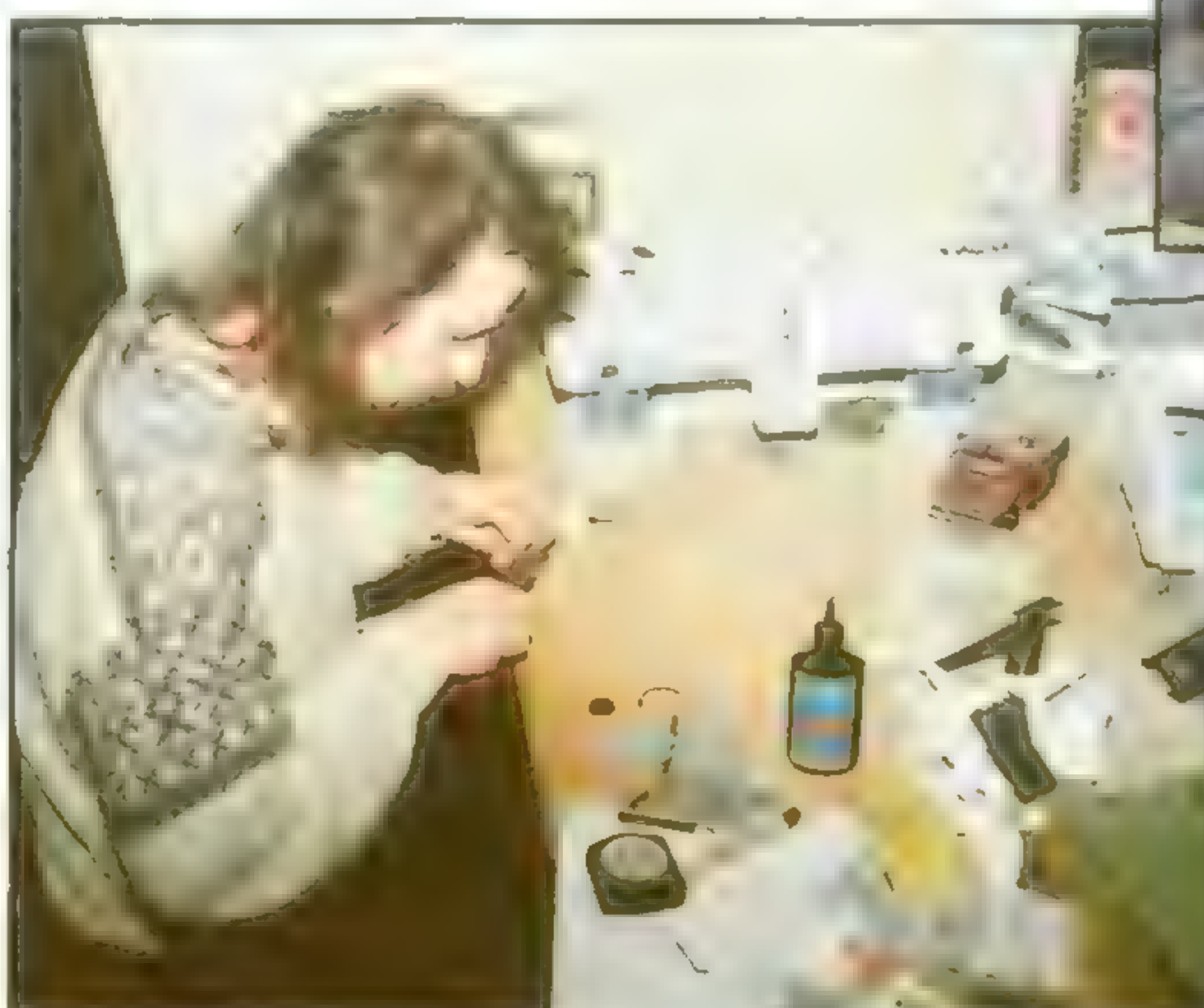
As well as being a superb figure painter, Mike McVey also specialises in making intricate dioramas. The photo on the right shows a section of some terrain Mike is making to go with a Wood Elves army.



Mike stores his paints neatly at the back of his table. The table lamp is similar to an ordinary standard lamp, but uses a fluorescent daylight bulb to cast a wider area of light.



Nigel does most of his modelling at home, but keeps a spare desk at work specially for painting and modelling projects.



Andy Chambers has a modelling area at home, where he concentrates on making terrain for Warhammer 40,000 and Necromunda.

MAKING BASES

Almost every project in this book requires a base. This section tells you how to make bases - what to make them from, and how to do it. A good strong base allows you to move a piece of terrain around easily, and makes the model stronger.

Most scenery models will need to be mounted on a sturdy base. The base will need to lie firm and flat on the playing area and withstand a great deal of use.

MATERIALS

There are several ways of making a good base for a piece of terrain. The best, strongest and most durable bases are cut from hardboard or a similar wooden material about a quarter of an inch thick. Such materials can be found in a hardware store or do-it-yourself supermarket.

The big drawback with wood like this is that it comes in big sheets and is very hard to cut into shape with simple tools. Wood bases are really for the experts!

There are other ways of making a good base which are easier, simpler, quicker and probably cheaper. There are three basic materials which can be used to make bases: cardboard, cork tiles and expanded polystyrene.



Cork tiles can be used for making bases.

Cardboard Bases

Cardboard is very easy to get hold of. The thicker and smoother the cardboard the better. Good quality cardboard of this kind can be found in packaging, at the back of pads of drawing and writing paper, or can be bought from art suppliers or stationers.

Thick cardboard is quite hard to cut. It may be too thick to cut with scissors and will require a modelling knife. Much easier to find, and much easier to cut, is the brown corrugated card used for the sort of packing boxes you find at supermarket checkouts. This kind of cardboard makes reasonably good bases.

Thin card, such as cereal packets, can be used for very small bases. If you want to use it for big bases, then it can be strengthened by gluing several layers together to make the equivalent of thick, dense cardboard.

Other Base Materials

Cork tiles are generally less rigid than cardboard, but can be cut with a modelling knife or even scissors if the tile is thin. Several tiles can be stuck together with PVA glue to make a more rigid and very thick base.

Alternatively a cork tile could be stuck onto thin card or brown box cardboard to make a base stronger than either material on its own.

Polystyrene tile can be stuck onto a base of cardboard or cork tile to create a thick, raised base.

Thick brown cardboard like this is easy to find, costs nothing, and is ideal for making bases with.



To make a base in this way, draw the shape of your base onto polystyrene, cut it out with a knife and stick it down with PVA onto thin card, thick brown box cardboard or a cork tile. This will give you a strengthened polystyrene base.

The edge of the polystyrene layer can now be sanded or shaped to give the base a sloping edge. Trees and other things can be easily stuck into the polystyrene and the upper surface can be shaped to look like rugged ground.



Sheets of expanded polystyrene can be bought in different sizes and thicknesses. Interesting, chunky shapes can be found as part of packaging.

MAKING A BASE



Cutting out a base made from two layers of thick brown cardboard. Note how the top layer of card has been glued at right angles to the bottom layer. This helps to prevent warping. The card layers have been cut at an angle, so the edge of the base will slope slightly.



Using a small piece of stiff card, the edge of the card base is covered with filler.

SURFACE TEXTURE

The final treatment of the base is to give it a realistic ground surface. There are several ways of doing this. The quickest and simplest is just to paint it green. If you use the same shade of green for all your terrain it will all match up nicely. At the Games Workshop studio, we always use Goblin Green for our terrain and for the bases of the models so they look good together on the wargames tables.

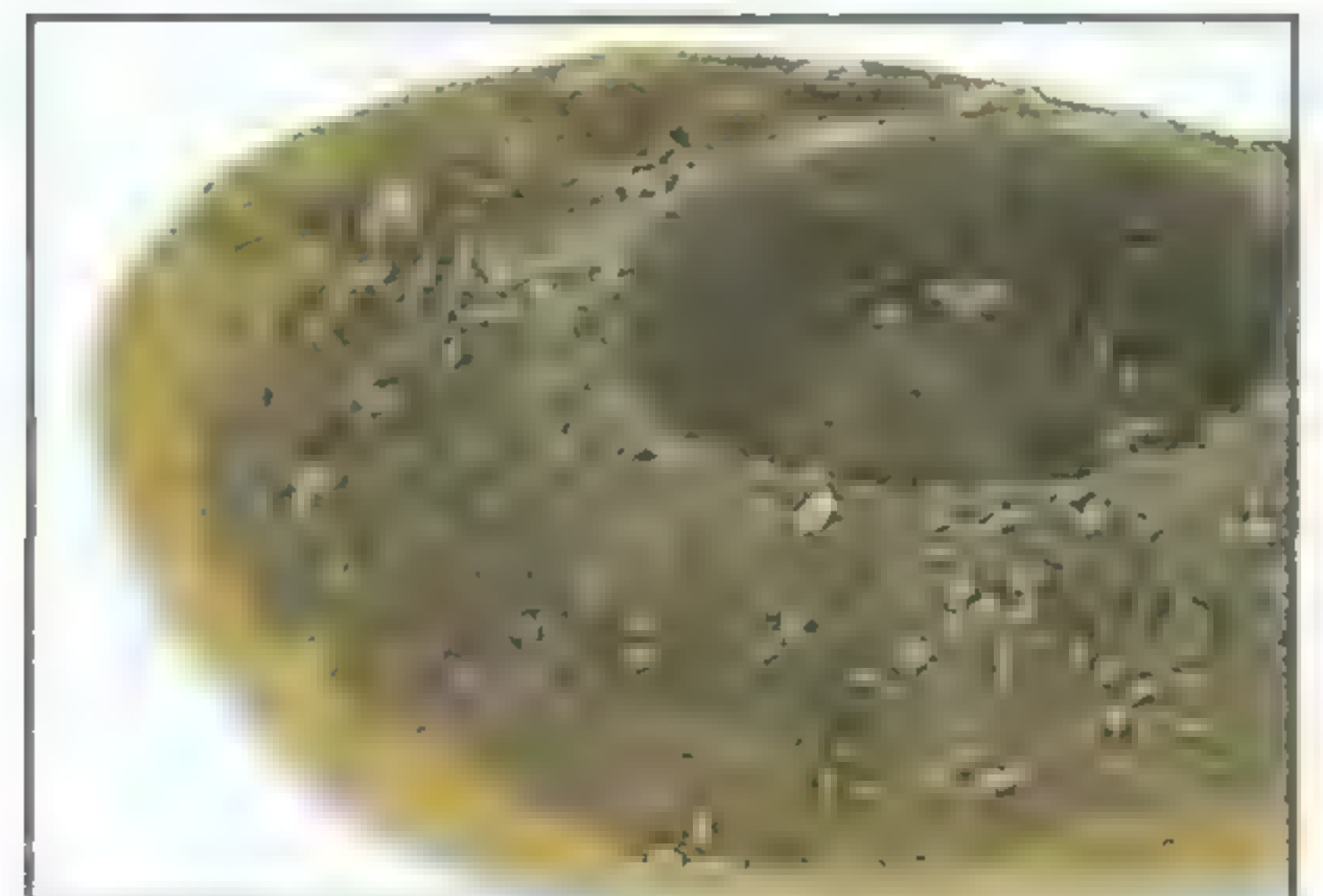
After painting the base you can cover it with flock to make it look grassy. Flock is fine, coloured sawdust. To cover a base with flock, paint it with PVA glue, scatter plenty of flock over it, then gently shake the excess flock off. It helps if you do this over a box or a sheet of newspaper!



A layer of polystyrene sheeting glued onto a piece of cardboard makes a thick base. The straight edges of the base will need to be sanded or cut into more natural-looking slopes.

Alternatively you could paint the base with textured paint, which is emulsion paint with sand and grit added, used for painting the outside of buildings or for ceilings. When dry this can be painted and drybrushed to look almost as realistic as flock. Many modellers do this before covering the model with flock! Instead of textured paint, you can paint PVA glue over the base and scatter sand over it. When dry wash over it again with diluted PVA to stop the sand rubbing off. When completely dry paint and drybrush for results almost as good as flock.

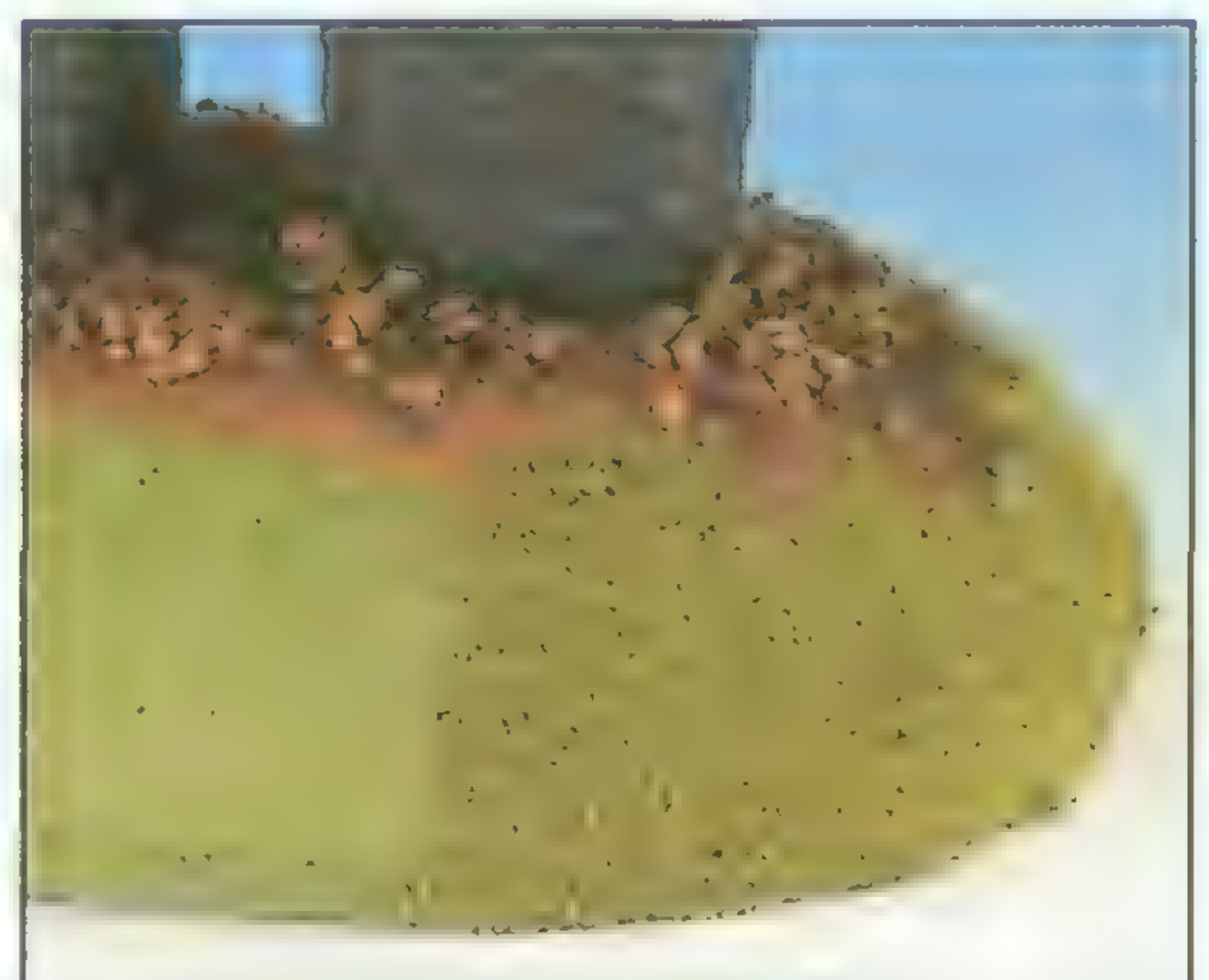
Sand, flock and coral sand were all used for the sides and base of this crater.



The best sand to use is very dry, absorbent yellow or silver sand, often called 'Shell-Sand', available from pet shops or from the beach!

MODELLING TIP - Gluing on Flock

When you're flocking a base or a large piece of terrain, it's best to glue on the flock a section at a time. If you paint the whole base with PVA, by the time you start putting on the flock some of the glue might already be dry! The best way round this problem is to paint an area of the terrain with glue, then flock it immediately. For a really thick layer of flock, repeat the gluing and flocking process when the first coat has set and dried.



SAND & PVA PASTE

PVA is a thick plastic glue which bonds very strongly and dries clear. It can be thinned with water and mixed with paint to achieve various effects. It can be mixed with sand to make a gooey paste which will dry rock hard with a rough texture. This stuff can be used like filler but is much stronger and has much less chance of cracking as it dries.

You can use fine sand, gritty sand or a mixture of both. Mix the sand and PVA in a yoghurt pot then apply it to the model with a spatula. The amount of sand you mix with the glue will determine how runny or stiff the paste will be. It is easier to apply paste which is not too runny nor too stiff and crumbly. To help the paste stick on, paint a little PVA onto the surface before applying the paste, especially if the paste is quite stiff. The paste will dry in a few hours and will be solid in about a day.



This base was first painted green. When the paint was dry, diluted PVA paint was applied, then flock was scattered over it.



The base of this statue was painted with PVA and sprinkled with sand. When dry, it was drybrushed in shades of brown.

WARPING

The biggest problem you can encounter when making a base is warping. This is when the base bends slightly as it dries and will not rest flat on the tabletop.

Warping is caused by painting or soaking the cardboard or other absorbent materials as you make the base which then warps the material as it dries out. Basically, as the wet surface of the material dries out it bends the dry surface and distorts its shape.

Some materials are resistant to warping and others may not warp because of this reason, but may warp under their own weight because the base has not been stored on a flat surface.

The best way to guard against warping is to choose your card or other materials carefully and to try not to saturate the base. Another way is to paint the bottom of the base first, before applying paint and glue to the top surface. This can help to counteract the tension caused by the drying of the upper layers of paint and glue. PVA glue can be painted on as a sealant to

Making a mixture of sand and PVA.



prevent moisture penetrating the cardboard and making it soggy.

Cardboard is most susceptible to warping, but corrugated brown box cardboard tends not to warp because of its structure.

Larger bases are more liable to warp than small ones. As a general rule it is better to make several small terrain pieces and place them together to make a bigger feature than to try and make a very big piece of terrain.

When sticking down any flat piece of card, cork tile or polystyrene onto a flat surface, place a weight, such as a telephone directory, on top of the upper surface. This will hold it down firmly as it sticks and avoid the edges lifting up or warping.

MODELLING TIP - Drybrushing

Drybrushing is a painting technique that accentuates the texture of a model's surface. Paint the model in the basic colour you want it to be - dark grey for stones, for example. When the paint is dry, mix a lighter shade of the same colour. Using an old brush, wet it in the paint, then clean off nearly all the paint by wiping the brush gently on a tissue. Flick the brush gently over the model, leaving a trace of the lighter colour on the raised parts of the model's surface. If you drybrush in progressively lighter shades, you can make this effect more pronounced.



Before drybrushing



After drybrushing

WARHAMMER SCENERY

The fantasy battle rages amid the rugged and fantastic scenery of the Warhammer World. There is only one way to cover your table-top battlefield with scenery fit for such awesome encounters: you will have to make it yourself!

HILLS. . . . .	.24
WOODS & TREES. . . . .	.28
RIVERS. . . . .	.32
BRIDGES. . . . .	.34
WATER. . . . .	.36
MARSHES. . . . .	.37
BURIAL MOUNDS. . . . .	.38
ROCKS AND STONES. . . . .	.39
STONE CIRCLES. . . . .	.40



Stone circle



Burial Mound

Rocks



Woods



River



Wooden bridge



HILLS

Hills are one of the most useful sorts of terrain for any gamer. A few hills placed on the field of battle can make all the difference between two armies dashing towards each other over an open plain and an interesting battle full of the tactical options that different levels of terrain afford. Hills are easy to make, and can come in all shapes and sizes. The more hills you have the better!

You will usually need at least two or three hills to make an interesting battlefield. Troops can hide behind hills and archers and war machines can be placed on them to shoot over other troops.

Hills can be made in various shapes and heights with either steep or gentle slopes. The three most common and useful shapes are a simple oval hill, a long ridge and an oval hill with a straight side for placing against the table edge.

The most important thing about hills is that it should be easy to stand models and units on them. The hill slopes should not be so steep that models fall over when placed on them. If you want the hill to have steep slopes, then it is a good idea to make flat areas between the slopes for placing models on the hill.

Hills with 'steps' offer the best possibilities for placing troops, and steps that are wide enough to accommodate two ranks of troops - about 6cm - are ideal.

Line your missile troops up on hills so they can see over the heads of friendly troops in front.



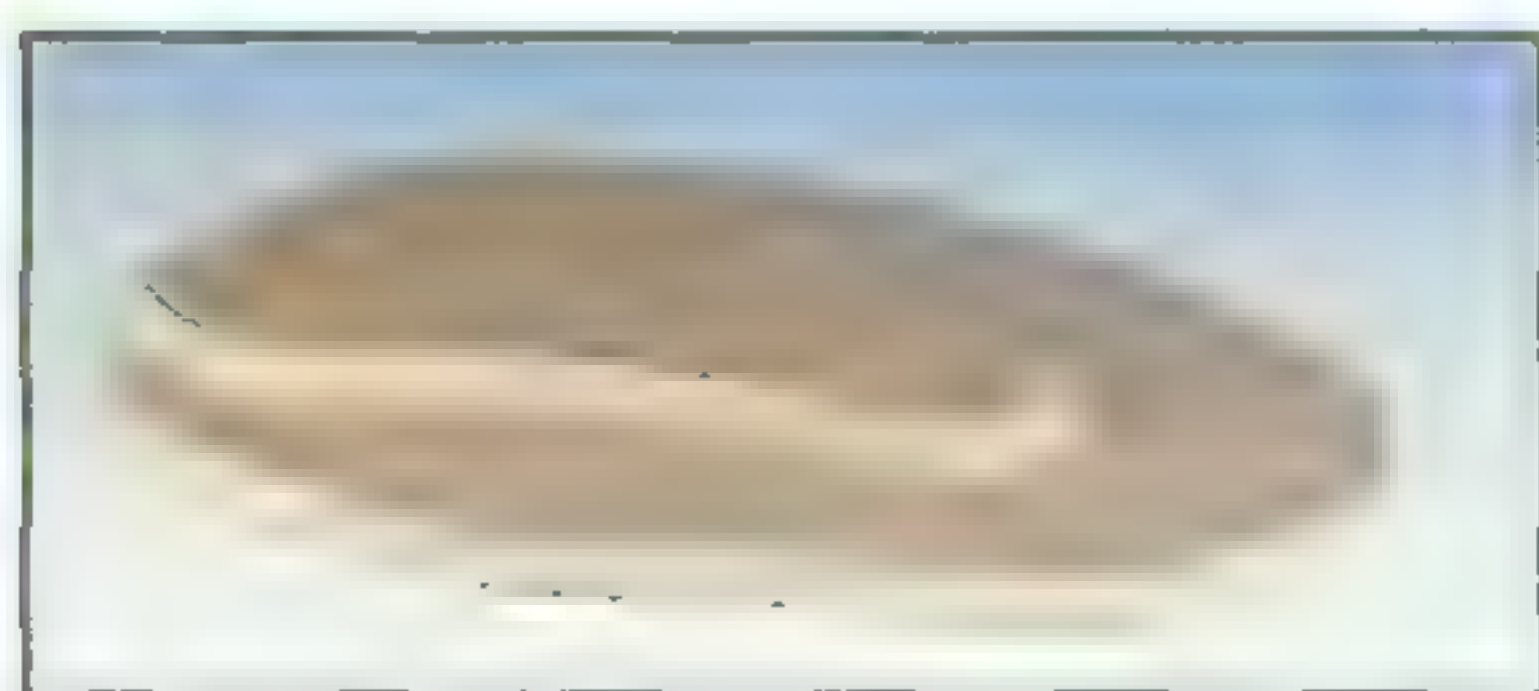
STEPPED HILLS

A stepped hill is the easiest sort of hill to make and is the best shape for placing models on. It is also the basic shape for making a sloped hill. A stepped hill rises up in several steps like a series of two or three flat platforms of diminishing size placed on top of each other. Models can be placed on any of the flat steps. Models on the higher

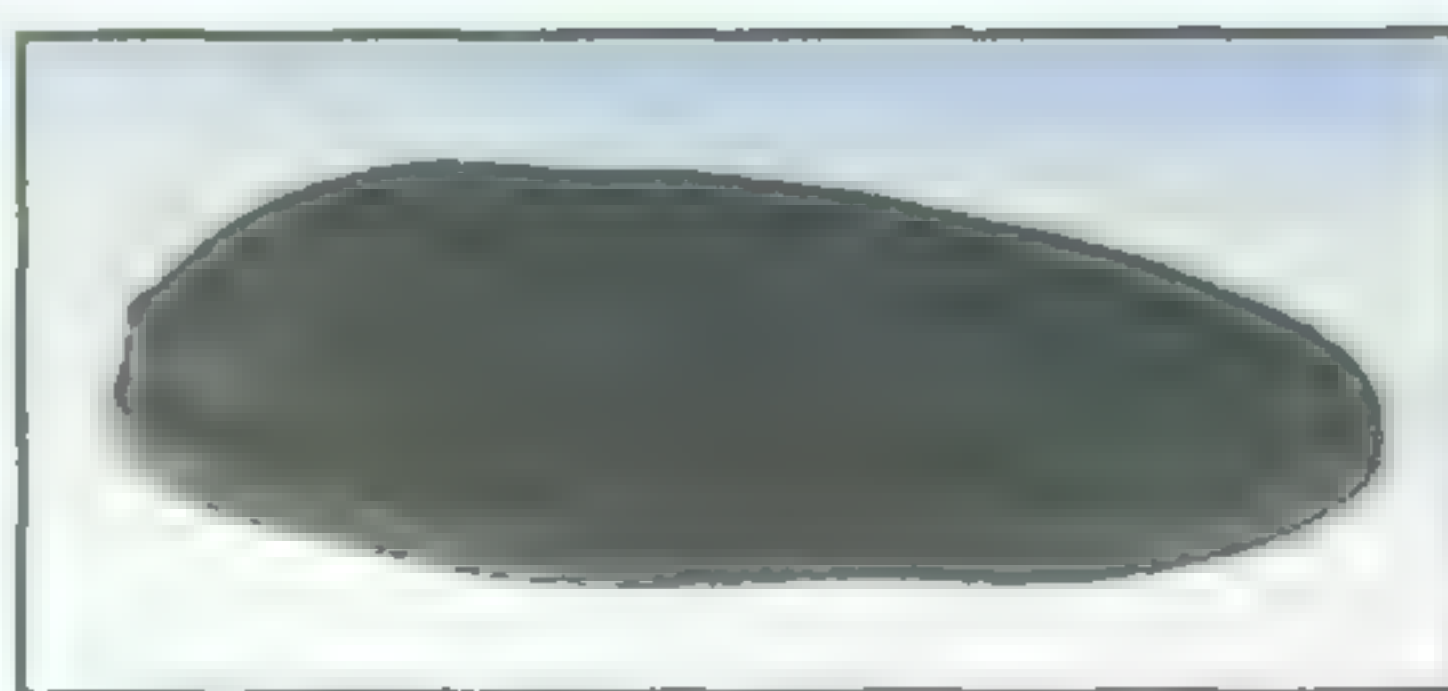
steps can see over and shoot over models on the lower steps.

To make a stepped hill you will need thick cardboard, cork tiles or polystyrene sheeting. Decide what material you are going to use and what shape you want the hill to be. Draw the shape of the base of the hill, for example a big oval about 30cm across, on one tile or sheet of cardboard and cut it out. This gives

MAKING A STEPPED HILL



1 The base of this hill forms the first 'step'. The base and the top layer were each made from two sheets of thick card.



2 The hill has been sprayed green, ready for flocking.



3 The hill has been painted with diluted PVA, and scattered with flock.

you the bottom step. If you want the step to be higher, cut out another identical step and stick it on the first to make a double thickness step and so on until you have the height you want.

If you leave it at that you will have a basic, flat-topped hill. If you want to add a second step, draw a similar shaped but smaller oval on another tile or sheet of cardboard and cut it out. Repeat the process as described for the first step if you want to make the step thicker and higher. If the first step was about 30cm across, the second step could be 20cm across giving plenty of room around it on the lower step to place models. Stick this step on top of the first step. You now have a two step hill.

You can leave it there or continue adding smaller and smaller steps until you have a three step or four step hill. A three or four step hill would count as a high hill, while a one or two step hill would count as a low hill or gentle hill.

The stepped hill is finished by painting it all over with green paint. You can leave it at that for a very simple hill, or improve the hill's appearance by painting it with PVA glue and scattering green flock over it.

HILL SHAPES

Hills come in all shapes and sizes. Here is a selection of basic shapes to get you started.



The difficult bit will be making the edges of the steps look good. If these are polystyrene, they can be smoothed with sandpaper. If they are cork or cardboard the rough edges can be smoothed and disguised with filler or PVA mixed with sand applied with a spatula. The odd stone could be added here and there as a boulder to disguise any bits of basic construction material which still show through.

Filler or plaster can be used to cover the steps and build up the sloping surface of the hill. If you use plaster you will need quite a lot and you may need to apply it in several layers to avoid cracking as it dries. It might be worth painting PVA onto the hill immediately before applying plaster so that the dry plaster doesn't flake off.

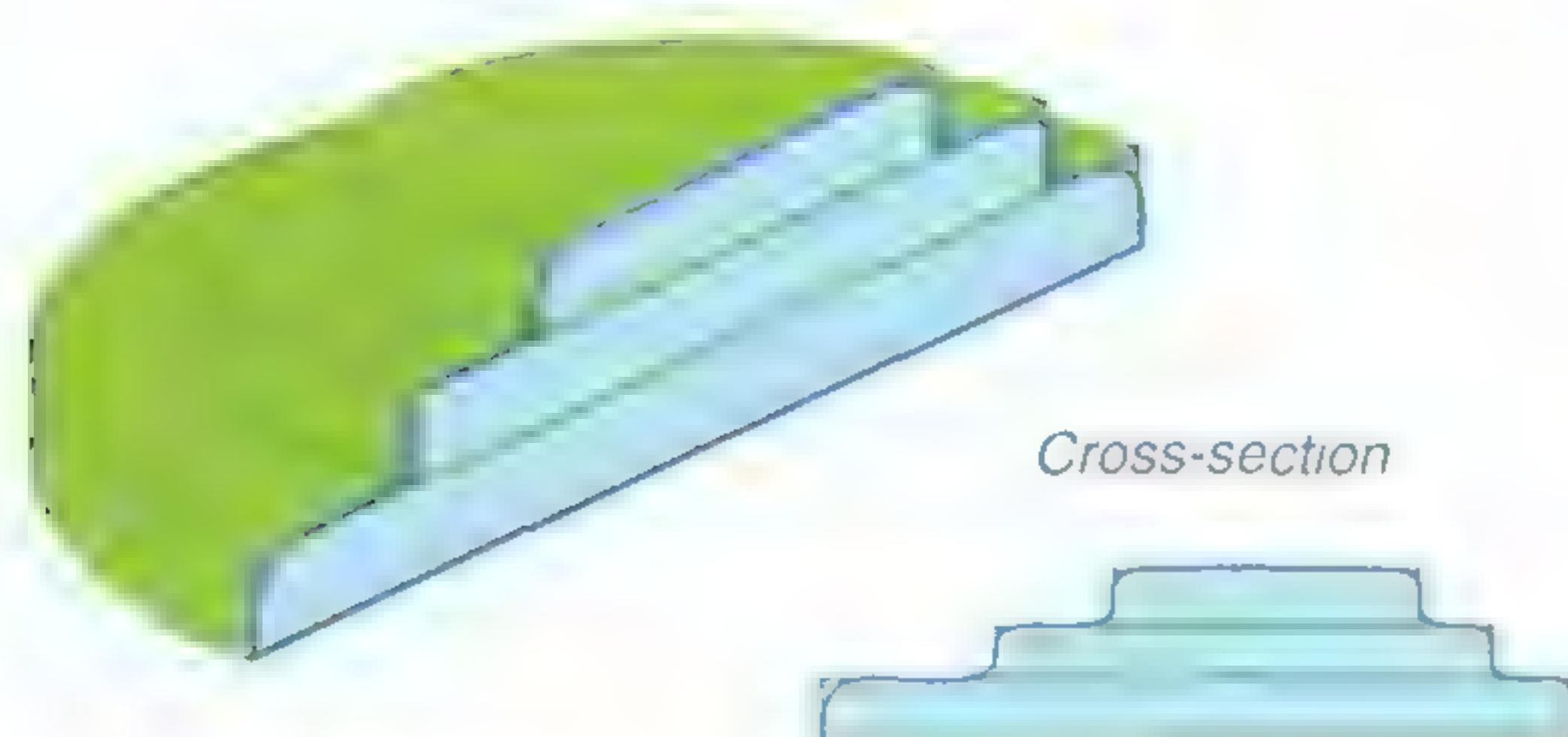
When the filler or plaster is dry you can paint the hill green. When the paint is dry you can paint the hill with PVA and scatter flock or sand on the hill to give it a very realistic look. If you use sand you should paint dilute PVA over it afterwards to help stop the sand rubbing off.

To finish the hill, paint the sand green, and drybrush it lighter green or yellow to give an effect like flock.

SLOPING HILLS

A stepped hill constructed as described above is the basic shape for a sloping hill so make the basic structure of the hill the same way. Next you will need to build up a surface over the steps, so that the hill slopes gently and the steps disappear.

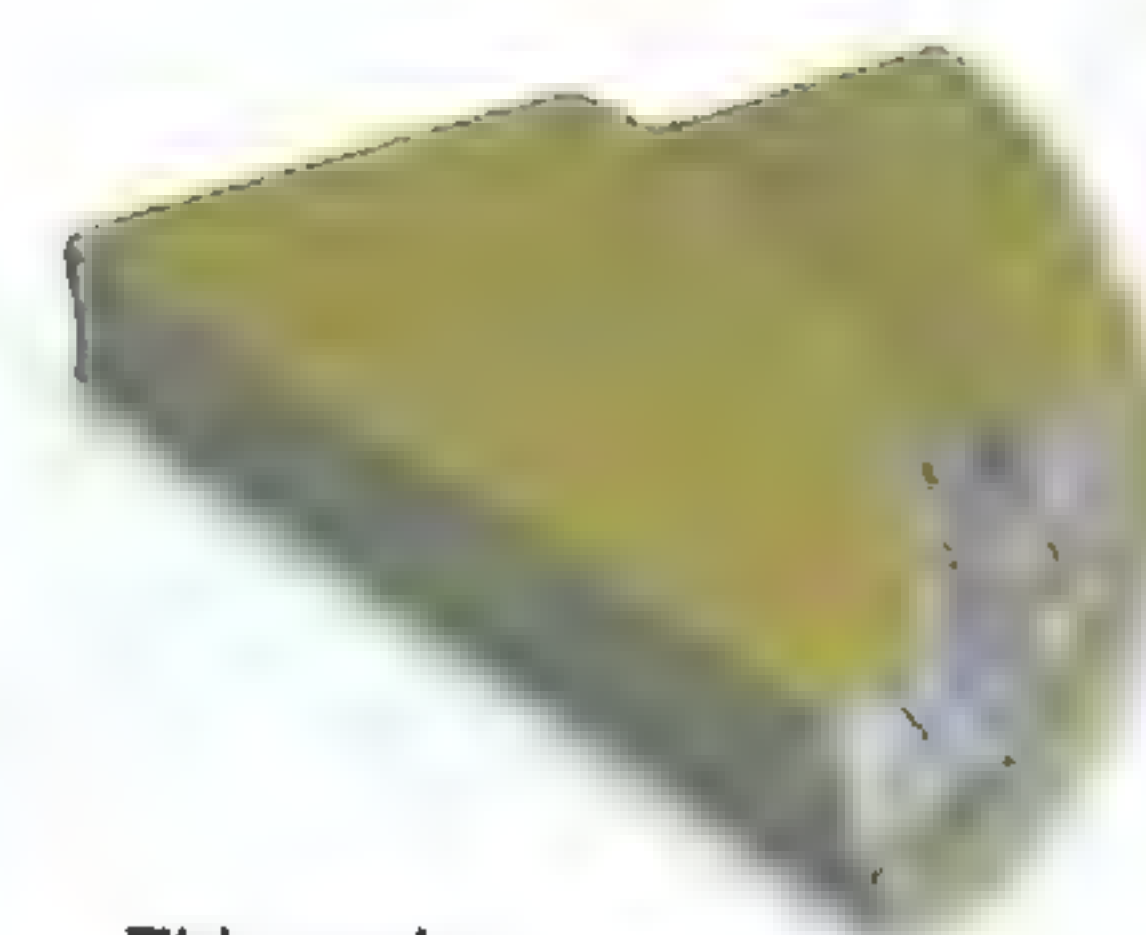
STEPPED HILL



Cross-section

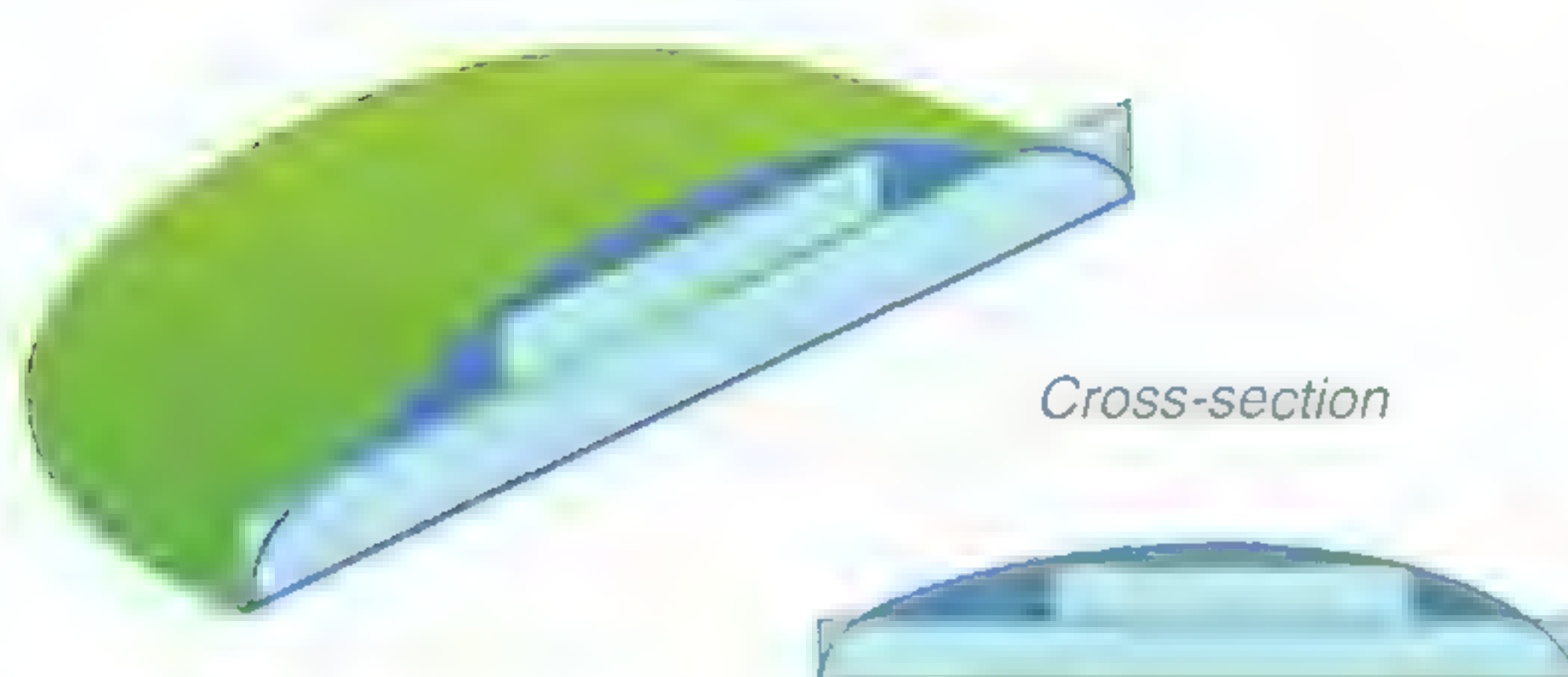


A straight-sided hill, designed specifically to go along the edge of a wargames table.

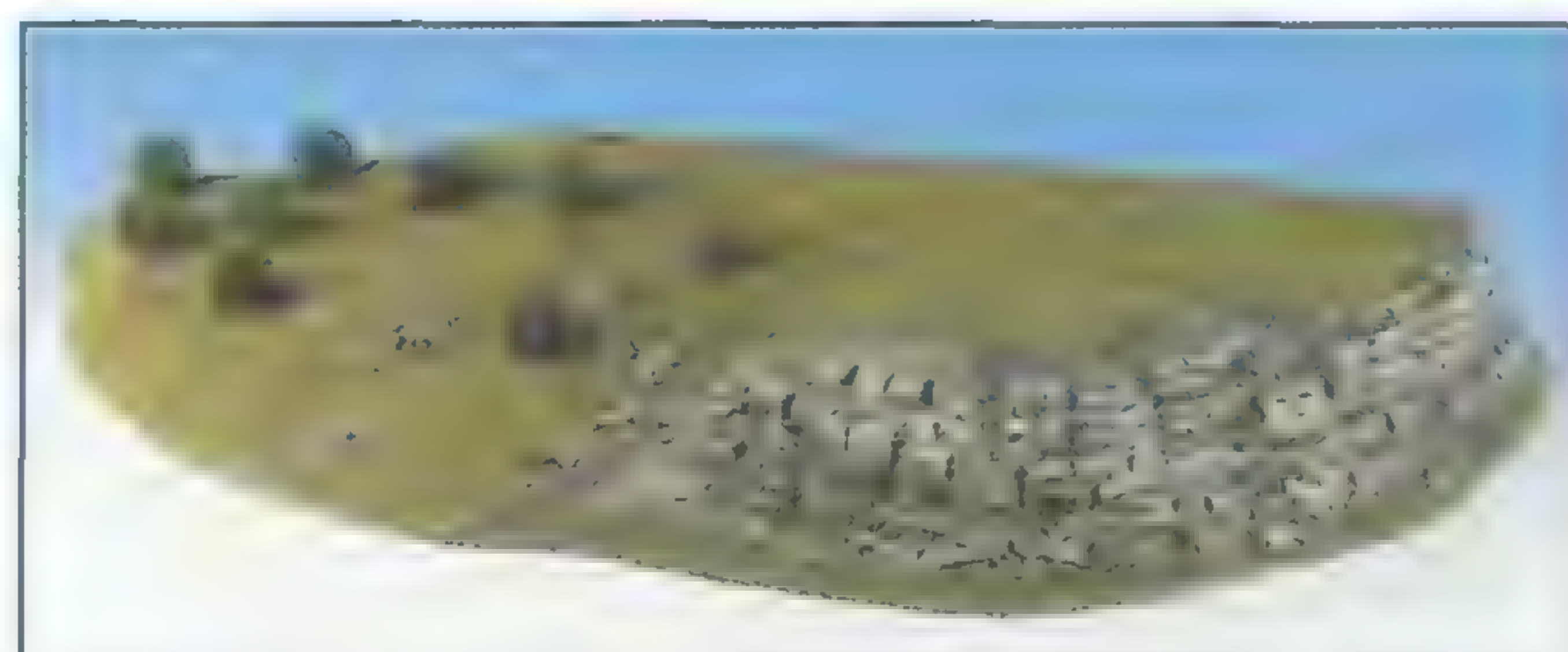


This wedge-shaped hill has been designed to fit neatly into the corner edge of a wargames table.

SLOPING HILL



Cross-section



One end of this straight-sided hill has been modelled into steep crags.

FINISHING TOUCHES



A cave has been modelled into the side of this hill. Note the loose stones round the entrance.

You can leave your finished hill as it is, bare and windswept, or go a stage further and add trees, scree, cliffs or boulders. If the hill is made of corrugated card or polystyrene, you can push model trees into it to create a wooded hill.

Boulders are easily added, just select a few rugged looking stones and stick them on the slopes. The stones should be painted a dark rock colour and drybrushed a lighter shade of this to really look good. Trees and rocks clustered together look realistic and can be used to create rocky slopes on part of the hill. Trees and rocks can provide cover for troops positioned on the hill.

Scree slopes are scatters of rock fragments which tumble down the sides of hills. These can be made by painting an area of the hill with PVA and scattering grit or small pebbles on it. Paint these in the same way as big boulders. Scree looks particularly good around boulders or on very steep slopes. It can represent an impassable or very difficult slope. Paint the scree dark brown, black, grey or purple and drybrush with light brown or light grey.

Very steeply sloping hillsides and steps can be textured with filler or plaster to look like cliffs. To do this, smooth filler over the steep part of the slope or against the edge of a high step. Then score the filler with

the edge of the spatula when it is partly dry to give the effect of cracks in the rock. Modelling clay can also be used for even more detailed effects. When dry, the cliff face can be painted a suitable rock colour and drybrushed a lighter shade. Patches of green flock can be stuck on here and there to represent moss and grass clinging to the rock face. You can embellish the cliff even further by shaping a cave at the base of the cliff. This is best done with modelling clay. The cave does not have to go back into the slope, the mouth of the cave can be painted black to give the illusion of depth and darkness.



The upper part of this scree slope was made by carving a small section of exposed polystyrene to represent rocks. The scree was made from tiny stones and coarse sand.



The shrubs on the hillside can be bought ready-made from Games Workshop.



A rocky cliff face goes up the side of this hill. The hill itself was made from layers of expanded polystyrene. When the sides of the hill were smoothed with filler, one area was left bare. The exposed polystyrene was then carefully cut into rocky shapes with a craft knife.



Two sets of hills placed opposite each other create a deep valley - an ideal place for an ambush!



You'll be able to use the hills you make for your Warhammer battles for Warhammer 40,000 too. Steep, craggy hills with lots of places for models to hide in and shoot from are ideal.

WOODS

After hills, woods are the next most useful terrain. In fact, you could make a very good battlefield with only woods and no hills. Woods provide cover for troops, slow down movement and can be used to hide troops from enemy shooting or line of sight. They are one of the most useful and most attractive pieces of scenery.

To make a wood follow the procedure for making a stepped hill as described in the preceding section, except that you only need to make the one step. This provides you with a suitable base on which to mount your trees. If you intend to stick trees into the base, it will need to be quite thick in order to hold them securely. Polystyrene is good for tree bases, as it's thick, and easy to stick the trees into. Finish off the base as described for the hills, with paint, sand or flock. Now you're ready to add the trees.

You can make trees from scratch but this can be time consuming and tricky. It is far easier and

quicker to buy ready-made model trees. These are very good, look realistic and are usually a lot better than any attempts at making them from scratch. They come in several sizes and are either deciduous trees or conifers. Small trees can be used to represent bushes in conjunction with larger trees. A wood looks most effective when it contains a variety of trees of different types, shades and sizes.

When you have chosen a selection of trees you can plant them in the base. The trees usually have twisted wire trunks which can be pushed into the base. Put a blob of PVA onto the end of the trunk so that it will stick firmly and not fall



Ready-made trees like this one are ideal for making woods with. Just stick the wire trunk firmly into your hill base, and there you go!



It's well worth making lots of woods - they'll always come in handy, and make your battlefields look great too!

out. Some model trees have a plastic base to the trunk which can be stuck down onto the base. Metal tree bases can be bought from Games Workshop for use with the wire trunk trees to give the effect of gnarled roots gripping the ground.

Arrange the trees on the platform with one or two tall ones in the centre and shorter ones around them. Put the shortest and any bushes near the edges. This will make the wood look realistic.

Another trick is to put the darker shaded trees in the centre to make the wood look deep and dark. Trees should not be placed so close together that models cannot be moved through the wood. Alternatively you can make several small woods which are really 'clumps' of trees and arrange two or three of these to make a wood. Troops can then be moved between the clumps.

FINISHING TOUCHES

The wood is now more or less finished but you can embellish it further with a few extra details. Stones can be stuck on the base among the trees and painted to look like random boulders or rocks poking up out of the ground.

Twigs can be stuck down to look like fallen tree trunks. These should be used sparingly and blended into the base with small amounts of green flock. Grit and small stones can be glued in small areas to look like patches of bare earth. These details will make the wood look more rugged and realistic and provide extra obstacles and cover for models.

MAKING A WOOD



Start off with an unfinished base, made as described in the Making Bases section. Stick the trees into the base, and, when you are happy with the positions, glue them into place. If you want to add any extra details, such as clumps of grass or small rocks, now is the time to do it. The base can now be painted and flocked as usual.



You can add all sorts of detail to your woods to make them look more realistic, like clumps of grass and plants, tree roots, stones and stony ground.



A tight stand of trees made with just three trees and a relatively small base.



MODELLING MASTERCLASS - Making Your Own Trees



I have been spending a lot of time making a collection of scenery and soon discovered that I needed trees... lots and lots of

trees! I wanted trees to add to bigger features such as crags, trees to add to hedges, clumps of trees to make forests and plenty of individual trees to put here and there on the battlefield.

Model trees are very good, and technically well made, but they tend to be made to a standard shape: either conifers of the spruce variety (Christmas trees) or deciduous trees which look like chestnut trees. Real woods and countryside include lots of different sizes, shapes and species of tree and I wanted to create the same effect in my model landscapes. I also wanted to make coniferous trees which were not fir trees, such as yews and Scots pines. I started making trees myself, experimenting with different methods.

Tree Trunks

The starting point for making a tree is to find something that will make a suitable tree trunk. The first, and easiest, way is just to pick up twigs which look gnarled enough to resemble miniature tree trunks. Often bits of root are exactly right and are also tougher and less

brittle than ordinary twigs. The big problem with twigs is that they snap, so short, knobbly ones are best. Twigs will need little or no painting, perhaps just a quick drybrushing to bring out the texture.

The other method of making tree trunks is to use wire. This has to be copper or steel wire of the sort bought on a roll in hardware stores, so that you can bend and twist it into shape. Cut short lengths and twist them together to make a thick trunk. Splay out short lengths at one end to be the roots and longer ends at the other to be branches. Some of the wires for branches can be twisted together to make thick boughs. Arrange the branches into a realistic tree shape.

The wire can be left as it is and painted to make a crude tree or covered in some sort of texture or tape. Masking tape or bandage dipped in glue or plaster will do well, or you can use plaster, milliput or plastic wood filler applied with a spatula. When this is dry it can be quickly painted and drybrushed to give a very gnarled effect. At this point you could even try to indicate the species of the tree such as painting a slender trunk to look like a silver birch with black and white blotches, or painting yews and redwoods with reddish brown bark and ash trees with greyish brown bark.

With a wire trunk, you can take the opportunity to make really interesting tree

shapes, such as trees bending over because of years of gale force winds! Each model tree can

be given a unique character which, when combined with other trees, makes the whole terrain piece look less artificial and more natural.

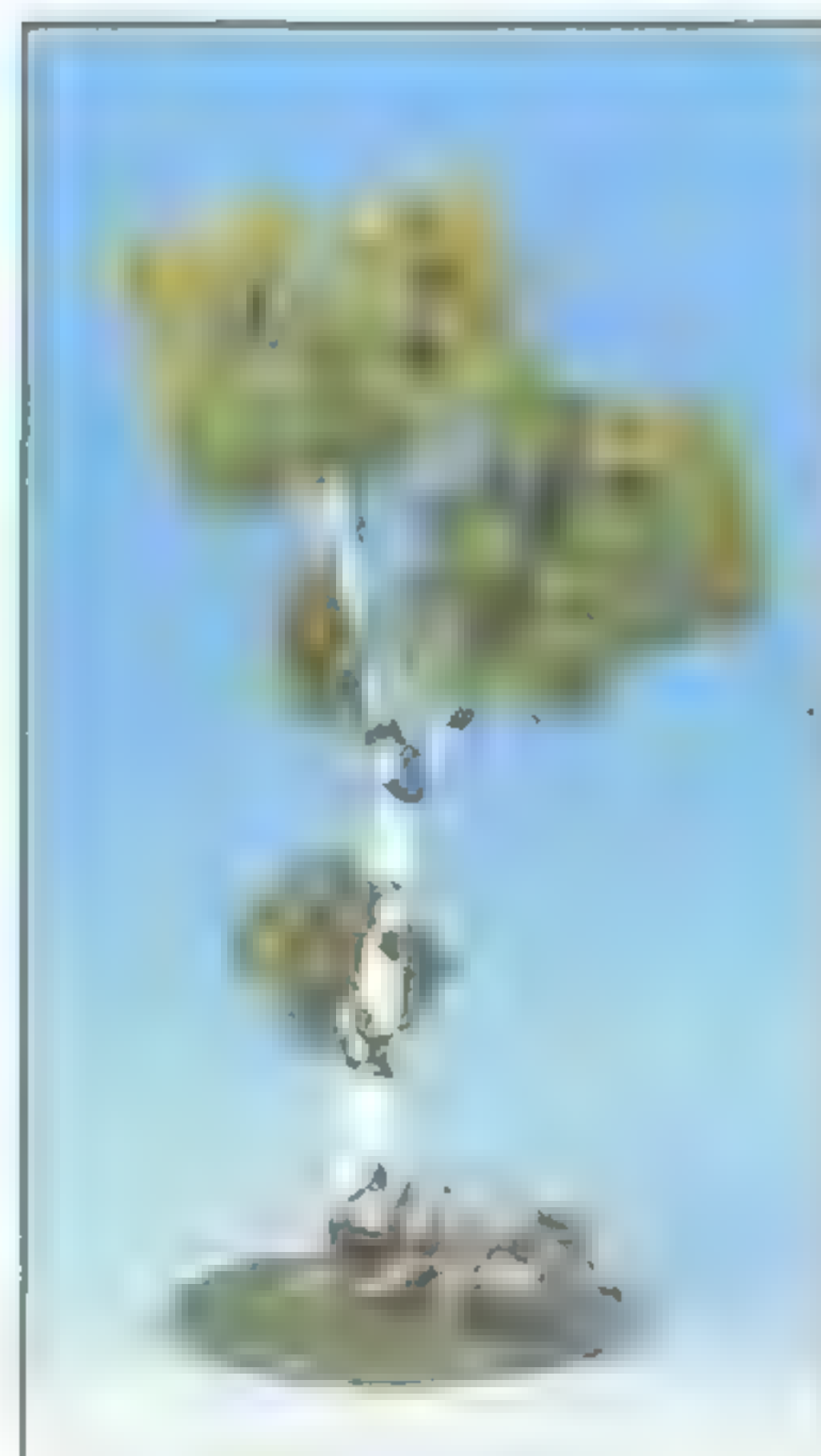


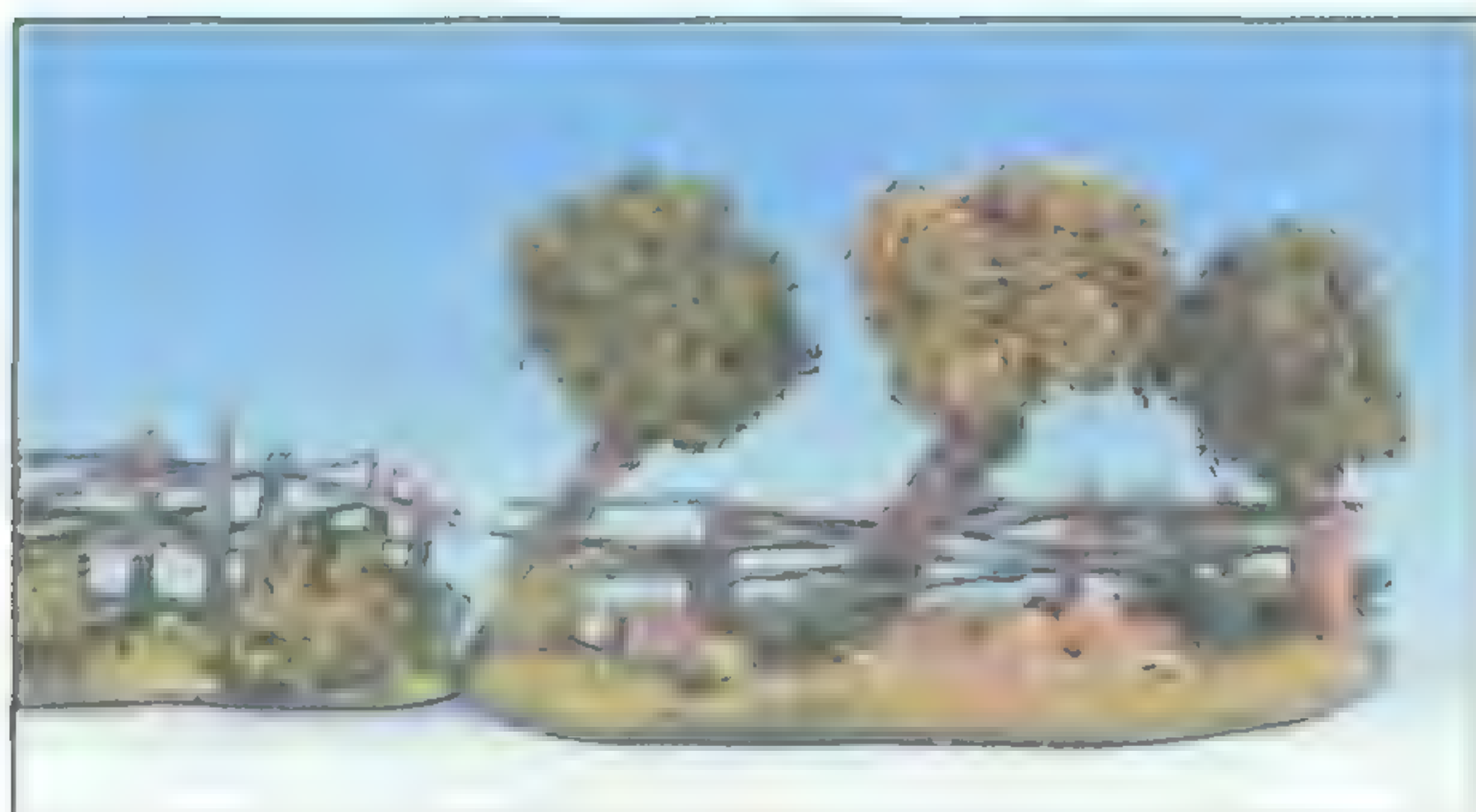
The Base

It is a good idea to stick the trunk onto a firm base before dealing with the foliage so you can stand it up while you work on it. I stick the wire trunk onto a base before I texture the bark. I just use an irregular disc shape cut out of card for the base. It just needs to be large enough to stop the tree falling over. I texture the base with the same stuff I put on the trunk and add flock and also stones to help weigh the tree down.

Foliage

The most difficult bit of making a tree is to find a way of giving volume and shape to the foliage. I use sponges, loofahs, moss and green scouring pads. These things can all be found in hardware stores and domestic supply shops (apart from moss, which you can find anywhere).





The sponge, loofah or scourer has to be chopped up into chunks, which benefit from being clipped into rounded shapes. If the chunks are quite big you can push them onto the wire or twig branches and fix them with glue. If you make lots of very small chunks, or want to use the offcuts from the big chunks, mix these up with PVA wood glue and apply them to the branches. This takes a bit of skill because the sloppy mess will try to slip off and it dries into a hard mass. You can do exactly the same with certain kinds of moss: smother the branches with PVA and squeeze the moss onto it firmly. At this stage the tree must be left to dry so that everything will be firm for the final stages.

If you have used moss, or green scouring pads, you will not need to paint the foliage at all, or perhaps no more than a bit of drybrushing with a lighter green. Otherwise, paint the foliage a base colour of

black or dark green. This will make the canopy look deep and dark. When this is dry, you can drybrush with lighter shades of green, or even yellow or autumn browns to give the tree its final unique character. When you have lots of trees with various shades of green, they always look amazingly like a real wood when arranged together. This is a great opportunity to experiment with as many shades of green or other woodland colours as you feel like!

Leaf Texture

Before painting the base colour, I sometimes add some sort of texture to resemble leaves. There are several things you can use such as cork granules (from model shops),

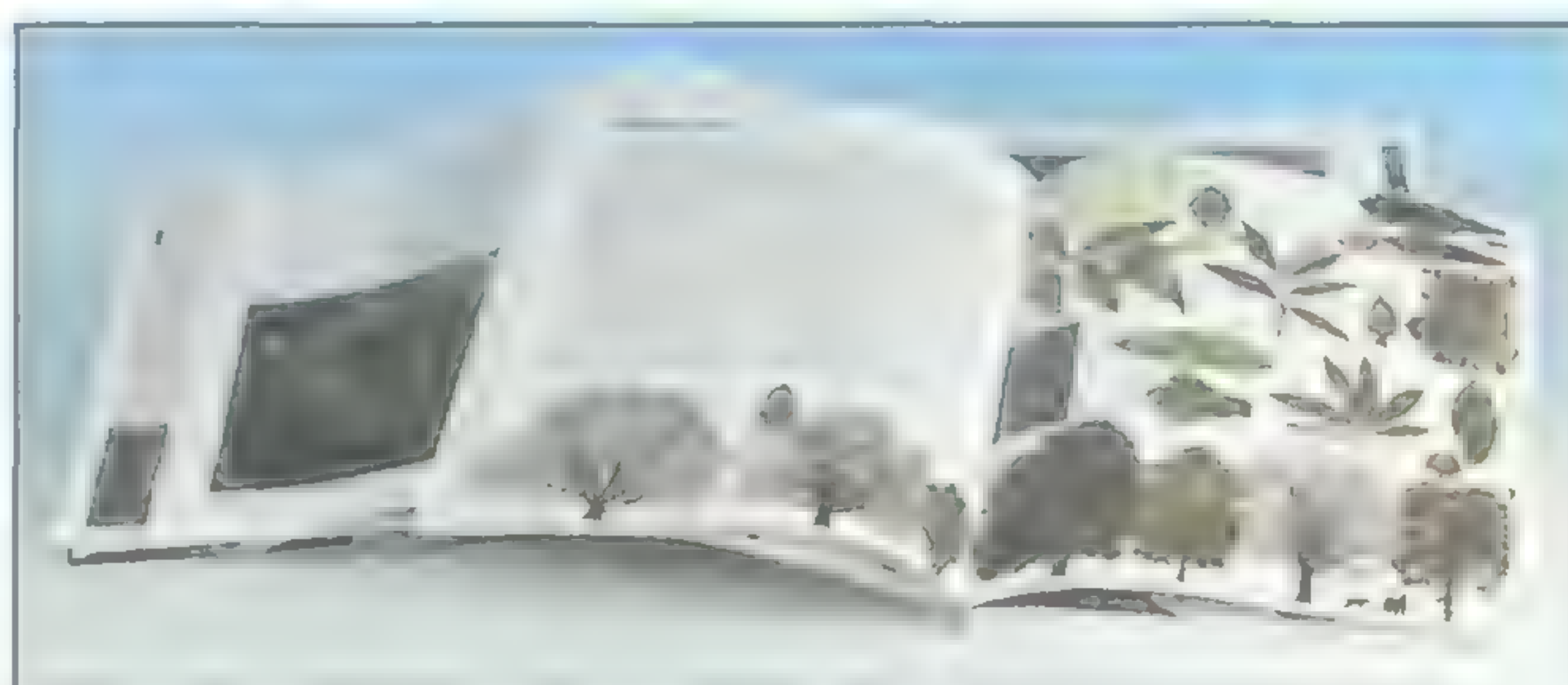


flock or sawdust. Paint PVA over the canopy and dip it into a saucer full of the sawdust or flock and then leave it to dry. You may need to do this twice to get good coverage. There is always some that falls off, but a good thick coat of base colour tends to fix it, or paint over it with diluted PVA or spray varnish.

Whether or not you texture the tree in this way, you can add a further layer of green flock on top by the same method. Sometimes I just keep going, adding flock and dry-brushing until the tree looks right, or I get fed up and start another one. Sometimes I leave a tree after the first few stages because "It will do". Either way, I have just created a different type of tree. When they are all mixed together in a wood, the effect of a lot of them together does the trick and looks like a real wood.

MODELLING TIP - Using Reference Books

You will find a good selection of reference book invaluable for modelling terrain. Well illustrated books about the countryside, geography, woods and trees, mountains and hills, and travel



books with photographs of foreign lands are all useful and will serve as a good source of information. If you want to make a specific sort of tree for instance, a book about trees, especially one that shows trees with and without their leaves, will be a great help.

RIVERS

Rivers are a useful addition to any terrain collection, and will complement your hills and woods perfectly. Make lots of river sections, designing them so they all fit together, and you'll find endless uses for them. Rivers do not block line of sight, but have a significant effect on troops' movement, as it is difficult to cross a watercourse except at a ford or over a bridge.

This section describes how to make a section of shallow river or stream. The section is curved so as to run across the corner of the battlefield. It will therefore be a complete piece of scenery in itself and can be used on its own. Once you've made one section you can repeat the process to make more sections to lengthen your river.

Use a sheet of thick strong cardboard to make the base for the river section, and draw the shape of the curved river section onto it. The river should curve almost at a right angle. Alternatively you could draw an almost straight or slightly curved section and arrange it on the battlefield diagonally across one corner. The section should be about 10cm wide for a shallow stream or river.

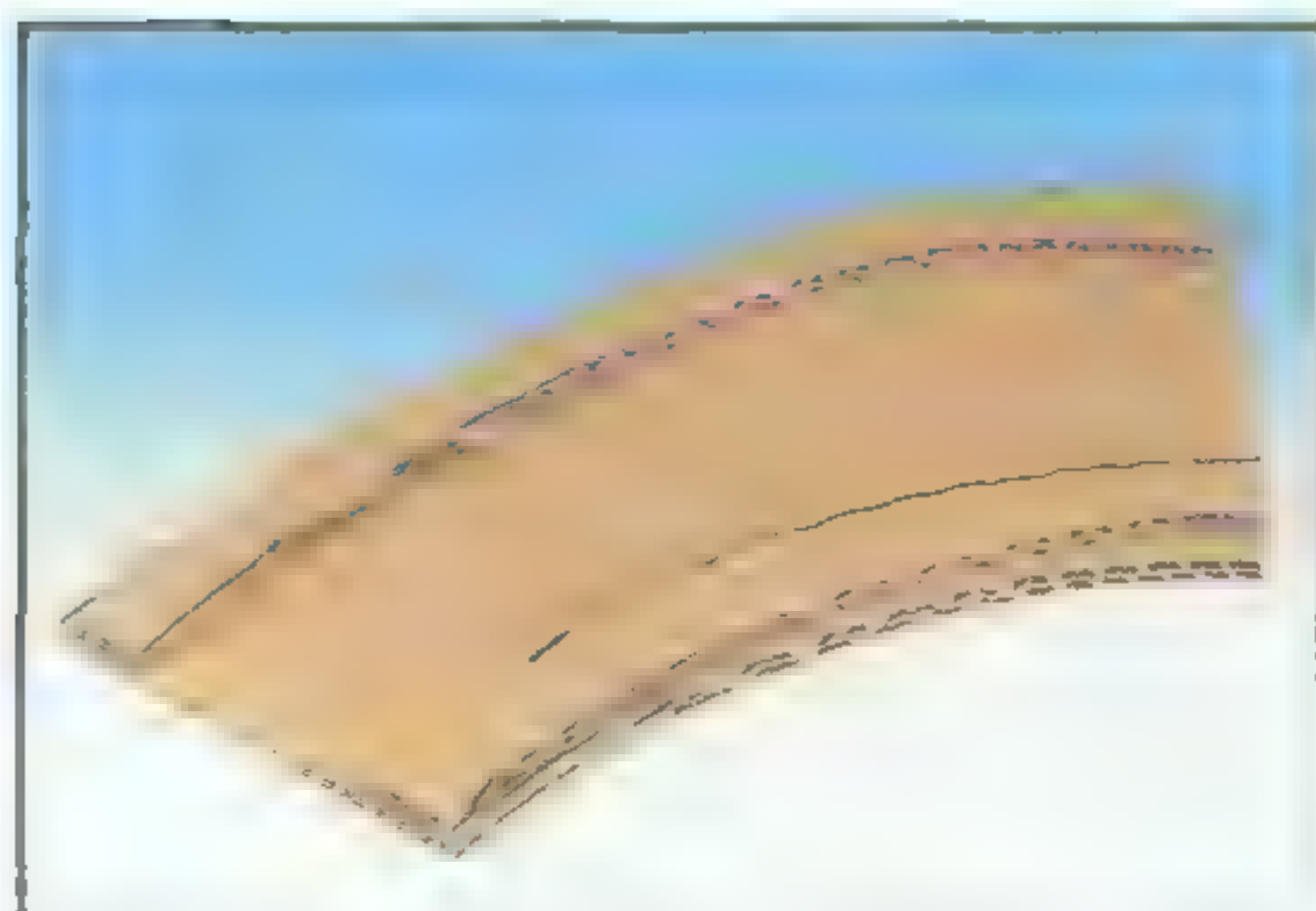
Cut out the shape you have drawn. You may find it useful to stick two or more layers of cardboard together to make a really sturdy and stiff base. If so, use the original shape as a template for the others.



When you have made the base for the river section you will need to build up the river banks along either edge of the base. The simplest way to do this is to stick strips of cardboard, cork or polystyrene tile along the edge. These not only raise the edges, but you can also build up the river banks against them. Cover the

strips with filler, or you could use modelling clay, plaster or plasticine. The banks could also be made by sticking a row of stones along the edge of the river section with plaster, modelling clay or plasticine between them to give the effect of a stream flowing along a rocky bed strewn with boulders.

MAKING A RIVER



1 Making a base for the river from several pieces of thick cardboard.



2 Preparing a mixture of sand, PVA and water to texture the banks of the river.



3 Applying the PVA/sand mixture to the banks of the river.

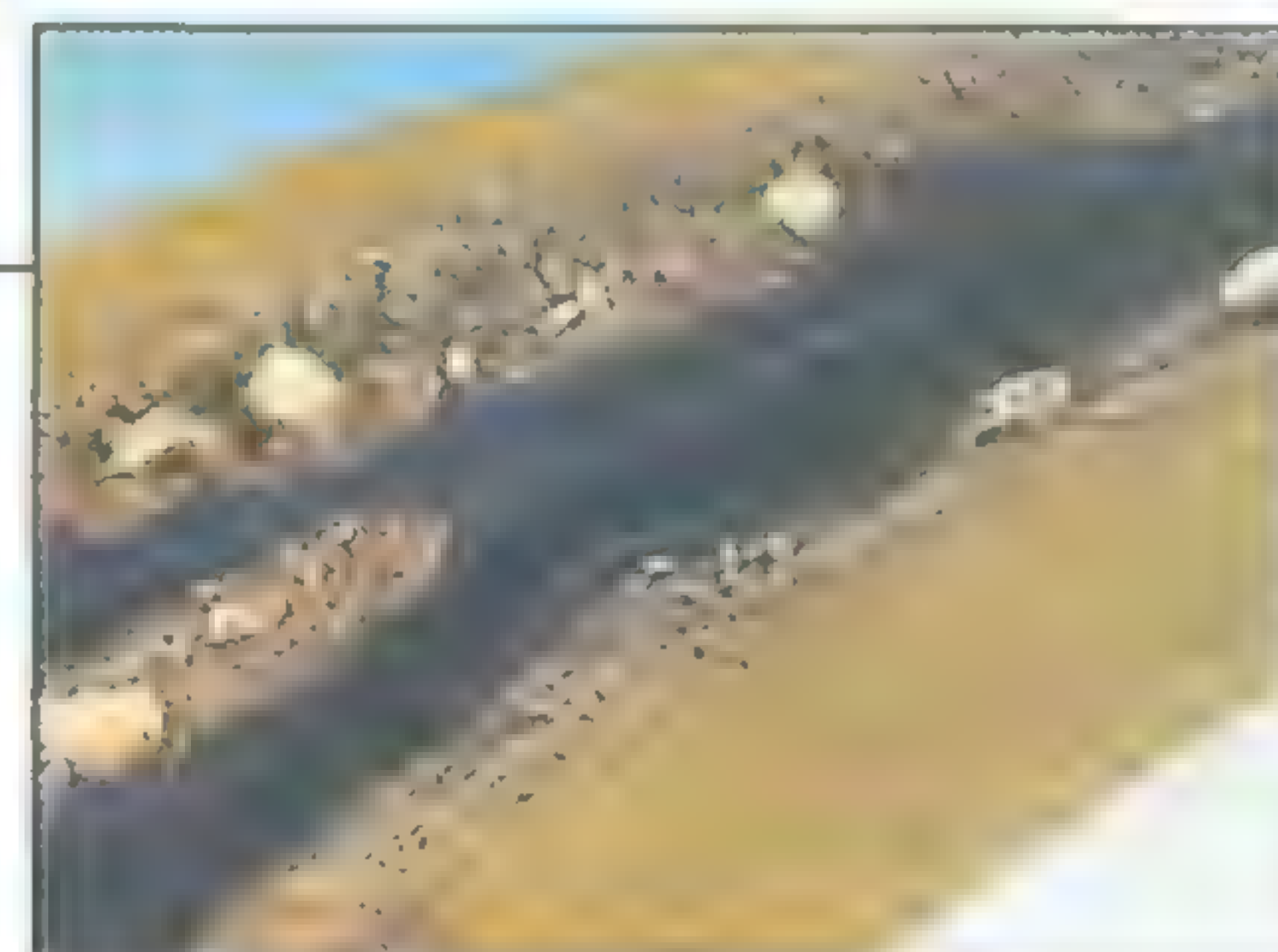
The area between the banks will be the river. When the river banks are dry, paint this area dark blue or dark greenish blue. The most convincing results come from merging and mingling areas of various shades of green and blue. Then paint over this again with PVA glue. When this is dry the surface will be shiny and look like deep water.

Now paint PVA glue along the inside of the river banks so that it overlaps part of the bank and part of the river. Scatter grit, sand and small stones over this and wait for it to dry. This will create a gravel shore along the edge of the river banks. Shake off the surplus gravel and paint it with a dark colour such as black, brown or dark yellow. When this is dry, drybrush the gravel with a light sandy colour or white.

All that remains to be done now is to paint and flock the river banks and decorate them with bushes and foliage.

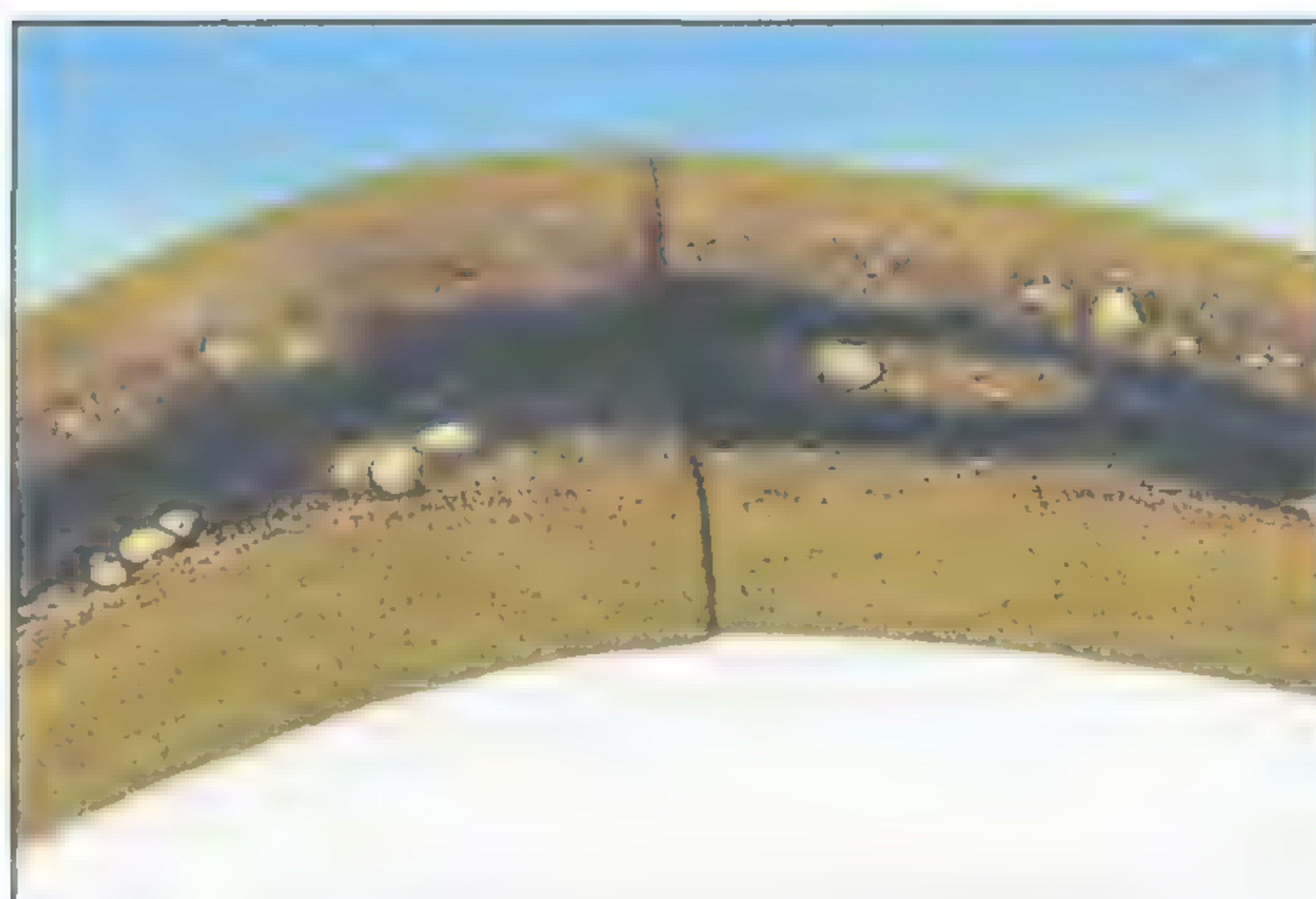
Reeds can be made from bristles or tufts of rope glued down beside the river, unravelled to look like a clump of rushes and painted green. The finishing touches can now be made to the water. With an almost dry brush and

THE FINISHED RIVER SECTION



white paint lightly indicate the frothing and splashing water along the edge of the gravel and around any boulders partly in the stream. You can also indicate waves and currents on the surface of the water. Depending on how much of this you do you can make your river section represent a sluggish deep river or a fast flowing torrent.

If you want to make the water look really 'wet' and reflective you can paint it with layers of varnish.



These two river sections have been designed so they fit together

THE FORD

If you want your river section to have a ford, this is made at the same time as the gravel is glued to the edge of the bank. At the point where you want the ford to be, stick down more gravel so the river becomes quite narrow at this point. When you paint up the section, this point will appear to be mainly gravel and easily crossed.

Another way to make the section fordable would be to stick down several flat pebbles to look like

huge stepping stones across the river. Gravel is likely to accumulate around the stones and this can be represented as described already for making a ford.



4 *The banks are finished, and the model is ready to be painted.*



The river banks are lower either side of the ford, and the river bed is more visible.

For more information about modelling water, see the Water section on page 36.

BRIDGES

The simplest bridge to make is a basic log or plank bridge such as you would find on a road leading to any peasant village in a wild border region. All you need to make this is a river section made as described in the previous section and some balsa wood or suitable twigs.

PLANK BRIDGE

To make a bridge you will first need a river section. Either choose a river section that you've already completed, or make a section specially for the bridge. The *Rivers* section explains how to make a river. Now all you need to do is construct the bridge, paint it and stick it onto the completed river section.

To make a simple plank bridge find two twigs or cut two thick strips of balsa wood long enough to span the width of the river or stream. Lay these down on a flat surface about 5cm apart. For the cross-pieces, cut twigs or balsa wood into 5cm lengths to look like logs or planks. Stick the cross-pieces one at a time along the two supporting timbers working from one end to the other. The cross-pieces can be laid edge to edge or slightly apart as you wish.

When the whole length is covered with logs or planks in this way and securely glued together the entire structure can be painted and drybrushed to look like weathered



timber. When it is dry, simply glue the ends of the long timbers and rest them on the river banks so that the bridge spans the river.

The bridge is now finished, but can be further improved by adding sand, flock or modelling clay to the

ends where the bridge meets the bank to look like the gravel road leading to the bridge. Further twigs or balsa strips can be added to the sides of the bridge to create rails to guide travellers safely across the water.

MAKING A PLANK BRIDGE



1 The bridge planks are being glued across the two supporting timbers. The planks and timbers are all made from balsa wood.



2 All the planks have been glued to the supporting timbers, and the bridge is now ready to be painted and stuck onto the river section.

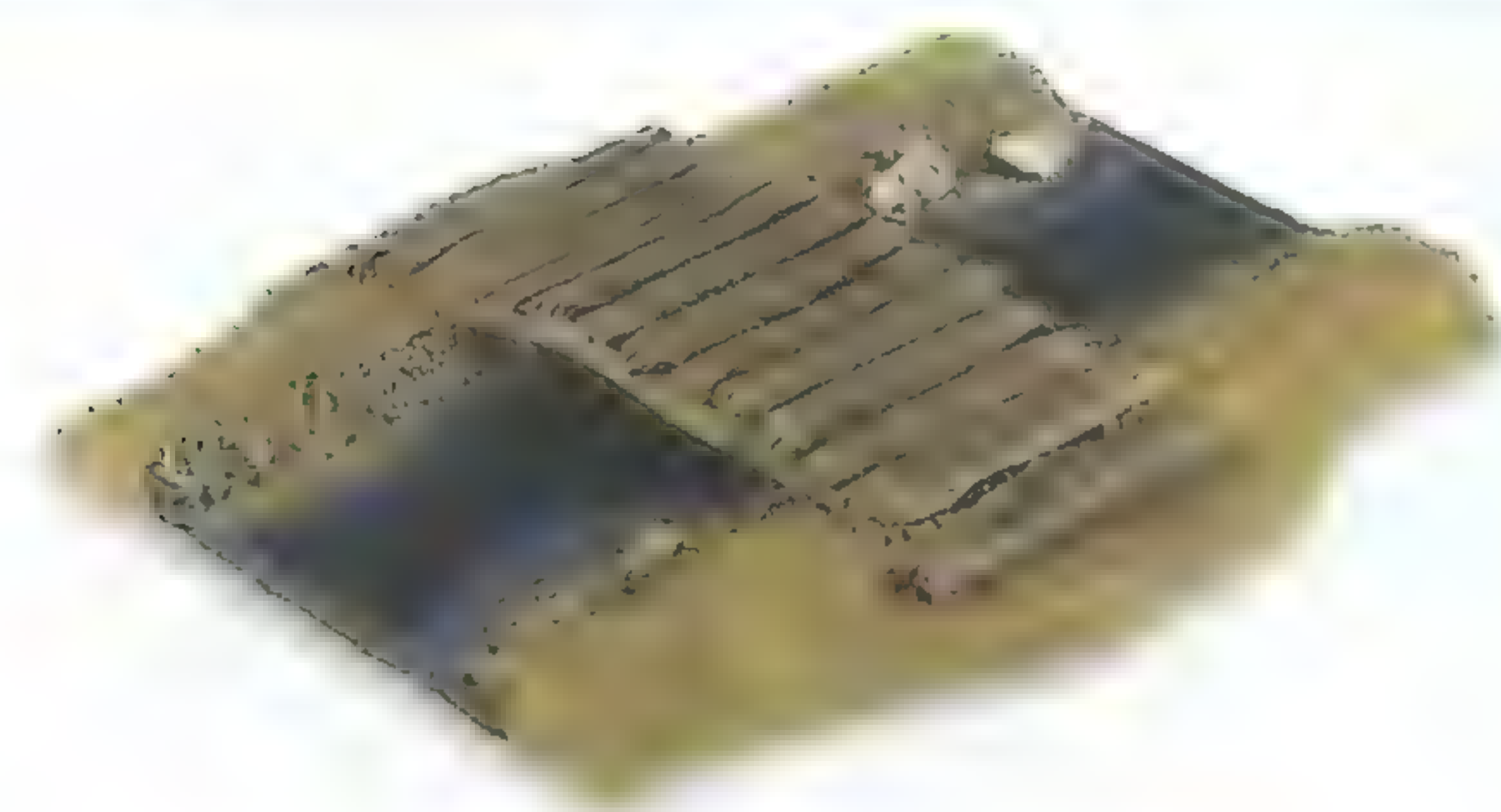
HUMP BACK BRIDGE

To make a hump back bridge, you'll need a finished river section. As the banks need to be wider than usual to support the ends of the bridge, it's best to make a river section specially.

To make the bridge, sketch the side wall onto a sheet of thick card. Cut out one wall, then use this as a template for the other, so both the walls are the same shape. If you want to add detail to the walls, this is the time to do it.

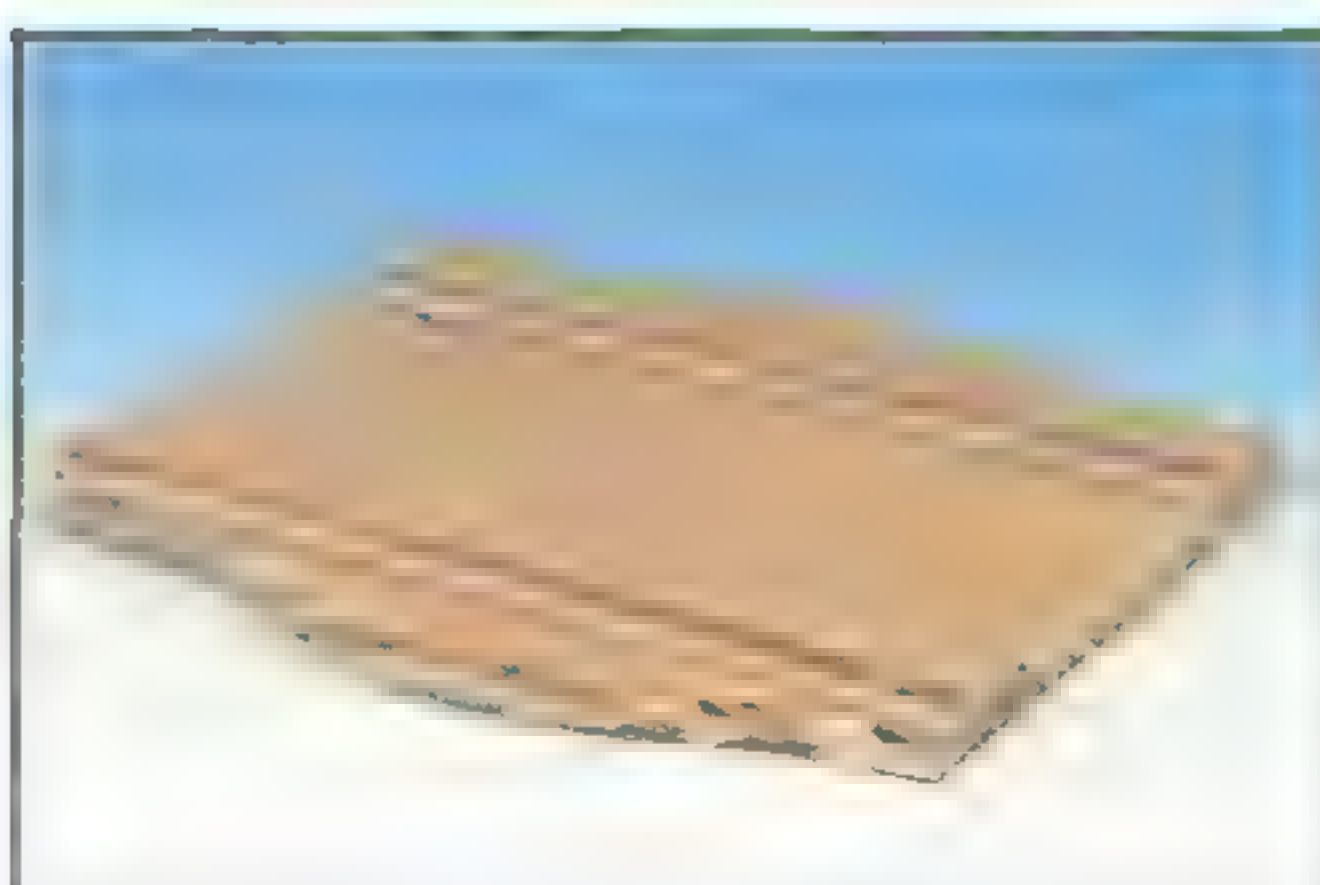
To make the road part of the bridge, you will need a rectangle of card cut to the width of the bridge. Cut the road longer than the span of the bridge so it curves up slightly.

Glue the road to one side of the wall, curving it to fit, and leave it to dry. To support the road, you could stick tabs of card or bits of balsa wood underneath it. Glue the other wall onto the road and leave it to dry. You can then texture and paint the walls as normal. When the bridge is ready, glue it onto the river section.

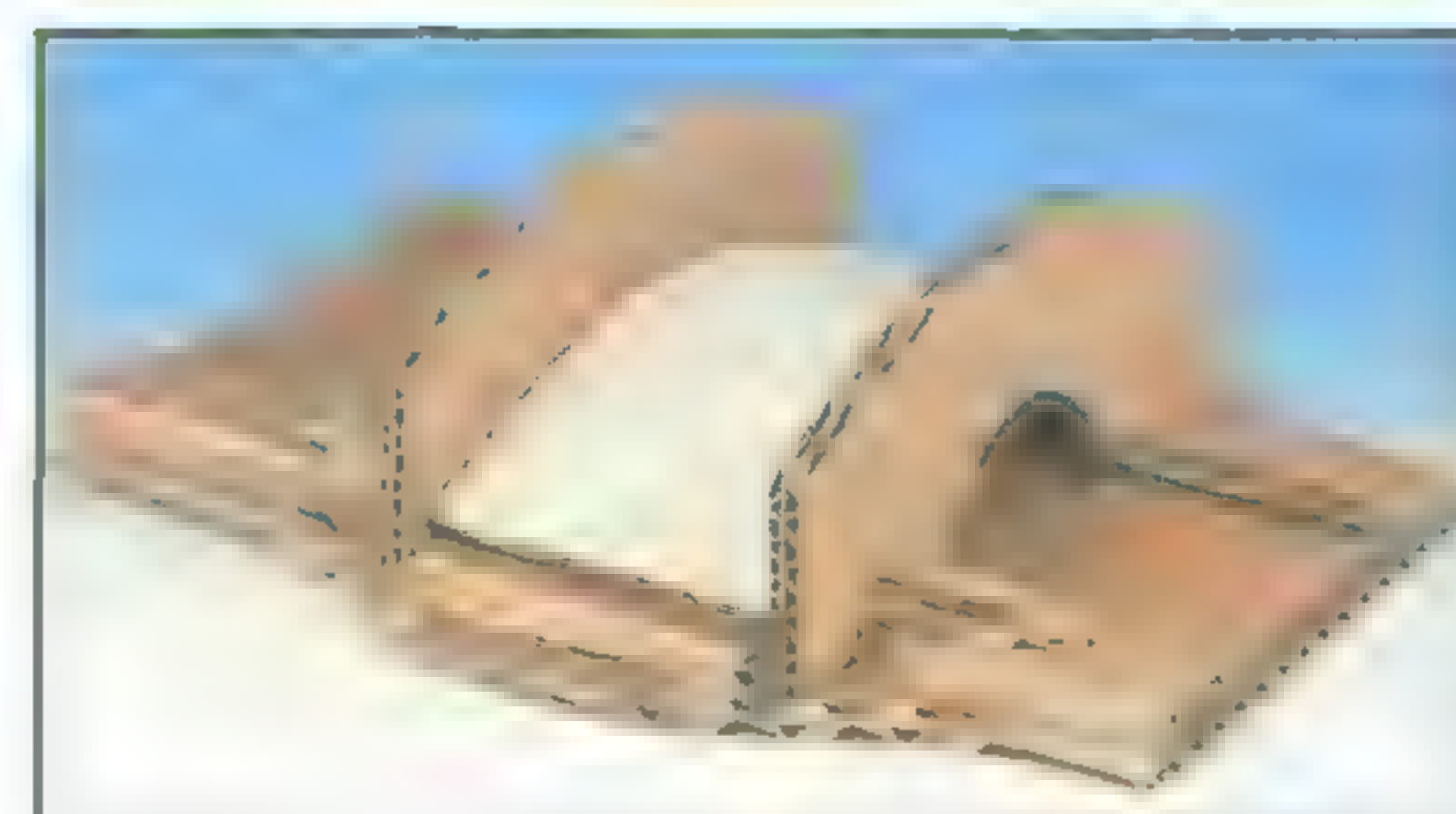


3 The painted bridge has been glued across a finished river section.

MAKING A HUMP BACK BRIDGE



Make the river section wider than usual so the ends of the bridge have somewhere to go.



The bridge has been stuck onto the river bed, and extra bits of card have been added to help hold it in place.

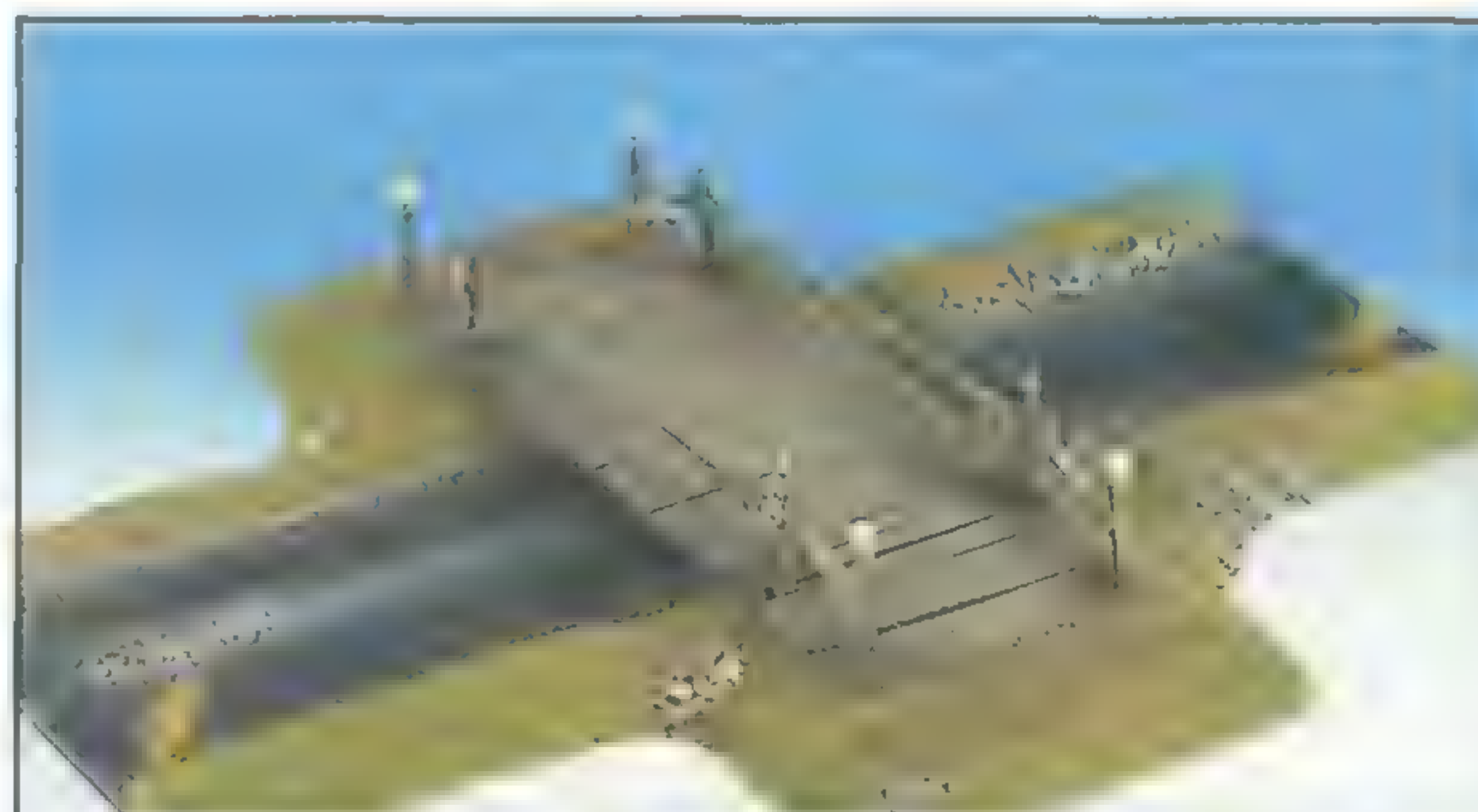


The finished hump back bridge.

Hump back bridges come in many different styles, and the four shapes below should give you some ideas.



Below: A jetty has been modelled onto this curved river section.



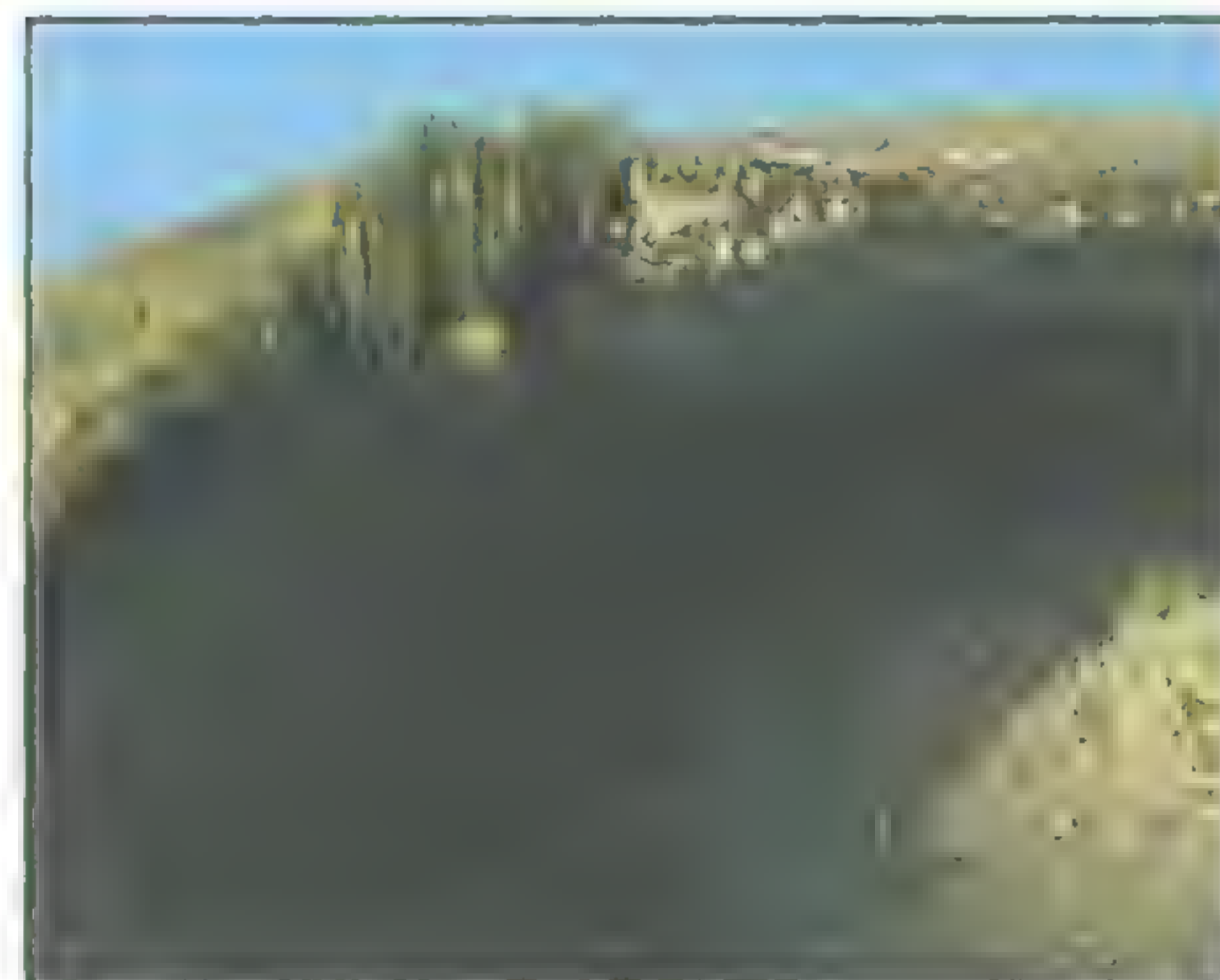
Above: This plank bridge has been enhanced by adding a simple set of rails, made from thin strips of balsa wood.



Right: The skulls on top of the rail posts are from Citadel Miniatures plastic skeletons.

WATER

There are two main types of terrain where you will need to represent water: rivers or streams and marshes. Once you have tried the basic technique, you can experiment to create different features such as ponds, ditches, craters full of water, a desert oasis or even the sea. Using different colours you can represent other liquids such as industrial effluent pools or molten lava for science fiction scenery.



The basic technique for representing water is to paint gloss varnish over the top of green or blue paint. The varnish dries to give a glossy, shiny reflective sheen which looks just like real water.

The first stage in the process is to paint the surface which you intend to be water with green or blue paint. The exact shade you choose will make the water appear deep or shallow, murky or clear. A deep bog or river would probably be best represented by a dark greenish blue shade. A fast flowing mountain stream would have a base coat of turquoise or blue.

Over the base coat paint a wash or glaze of blue or green to deepen the effect. Wait until the base coat is completely dry before doing this. You can subtly shade the area to look like patches of deeper and shallower water, or make some areas murkier than others. All this will generally add to the realistic appearance of the feature.

The base coat will always benefit from at least one wash with a translucent green or blue just to enhance the watery effect.

When the base coat and washes are completely dry, paint over them with gloss varnish. There are several varnishes which you could use, such as polyurethane varnish, yacht varnish, spray varnish from an aerosol can or acrylic varnish. The important thing is that the varnish dries glossy. Satin varnish

will not look like water and matt varnish is no good at all!

These varnishes can be found in model shops and hardware stores. Most of them will require the brushes to be washed in paint thinners after use and will not be water soluble. For this reason the varnish has to be put on top of dry paint.

After the surface has been varnished, you will not be able to paint over it very effectively with water based paints unless they are very thick, so put all the layers of wash and glaze on first. The varnish is the final coat.

You can use several layers of varnish. The more varnish you put on, the glossier and 'wetter' the water will look. The varnish will take a long time to dry completely, so avoid letting any dust or flock fall onto it before it is dry or it will stick to the tacky varnish and spoil the effect.

Water Plants

Before applying the final coat of varnish you can embellish the watery area with extra details. Using light green, flick brush strokes or blobs to look like clumps of submerged reeds and water lilies. Flock can be sprinkled onto the wet varnish which will stick and look like algae and duckweed. This looks most effective against the edges of the water, or around clumps of reeds and boulders.

The Sea

Surf and the foaming edges of waves breaking on the beach can modelled with glue and sand. Paint wavy lines with PVA glue and sprinkle sand over them, then wait for the glue to dry before shaking off the surplus sand. The sand will create the texture of the surf. The flat areas between the waves are painted dark blue, giving way to turquoise as you get near the beach to indicate shallower water. Wash over everything with blue or green inks before putting the varnish on top. After varnishing the whole sea area, the lines of glue and sand are drybrushed white to represent surf.

Raging Torrent

The technique for representing waves and surf described above can be used for any 'white' water - fast flowing water frothing and foaming around rocks. This can be used to good effect on mountain streams where the water is rushing between rocks and boulders and also for rugged coastline with submerged rocks and the sea breaking on the cliffs.

A simpler technique for representing white water is to paint streaks of white into the wet base coat, or carefully drybrush white paint around partly submerged features such as rocks or the piers of a bridge. Very thick white paint can be applied by drybrushing even after varnishing to improve the effect.

MARSHES

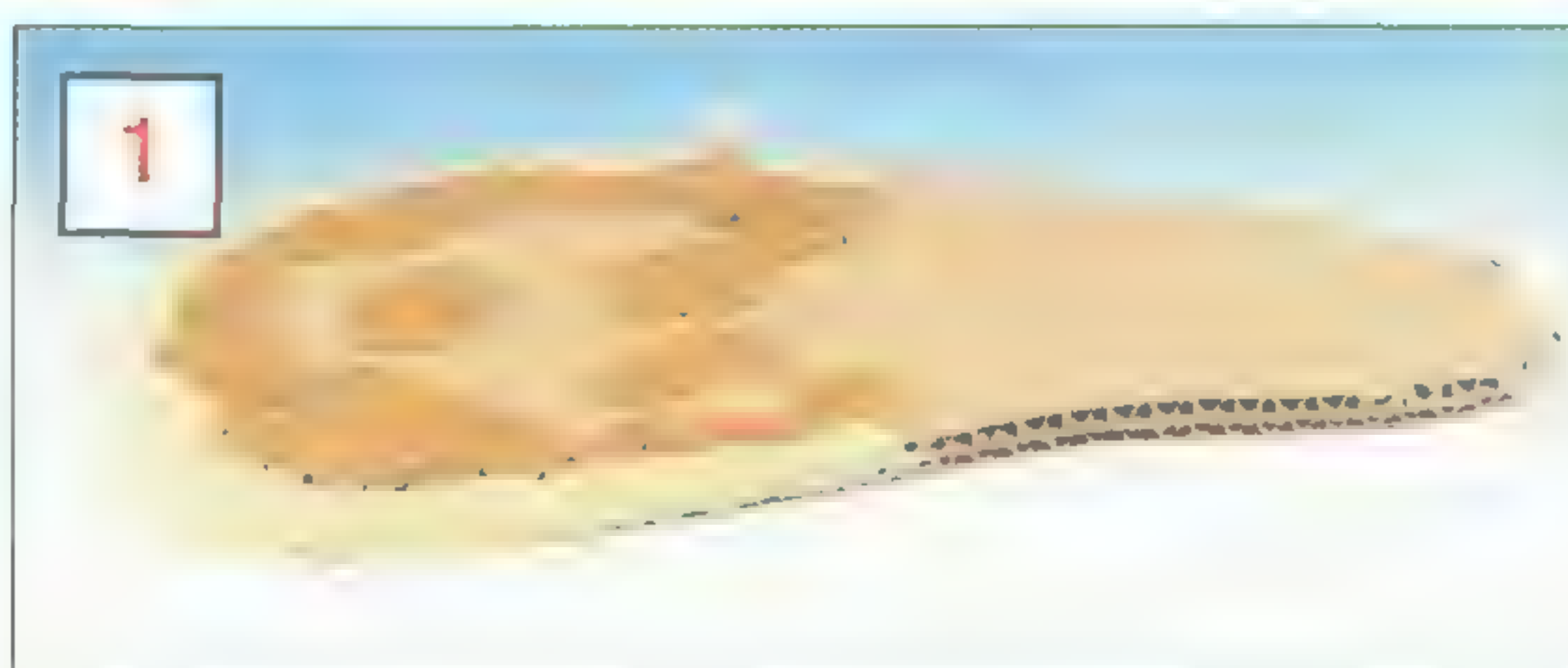
A marsh is a flat area of waterlogged ground. Though troops can move through marshy terrain, the slushy footing will slow them down considerably. Marshes commonly occur near rivers, and along sea coasts.

A marsh is basically a flat area of boggy ground with pools of stagnant water, hummocks and tufts of reeds.

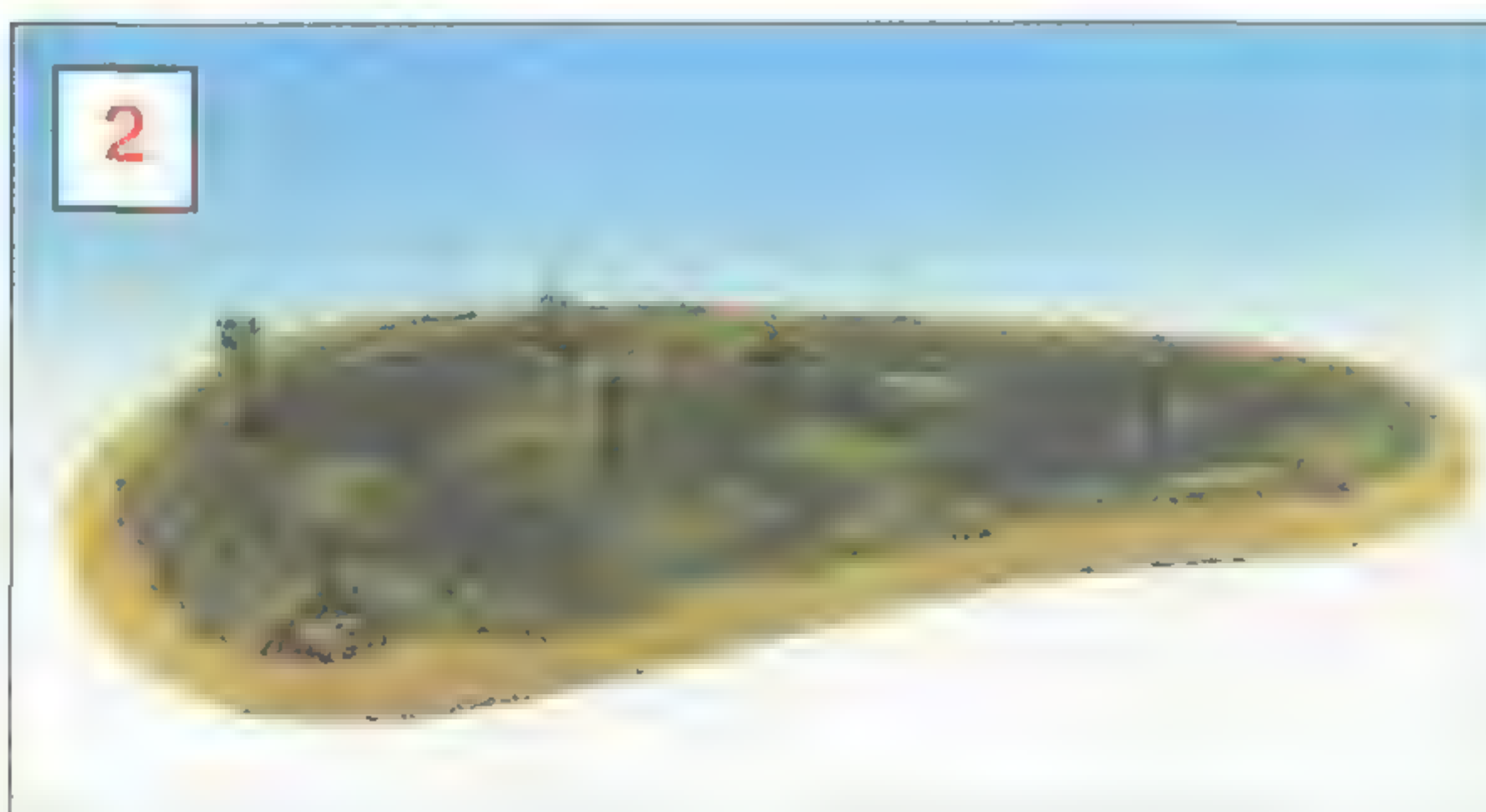
To make a base for your marsh, cut out an irregular shape from a sheet of stiff cardboard. If you only have thin card, stick several layers together until you have a strong enough base for the terrain piece.

Paint the top of the base with a suitable colour to represent marsh water, such as greenish-blue or yellowish green. The darker the green, the deeper the water will appear to be. Wash over this with patches of green wash or glaze to create the illusion of deeper pools of water. Paint over the areas which are going to represent water with PVA glue. When this dries it will give the pools the reflective quality of water so that the water will actually look 'wet'. You can further enhance this effect by adding layers of varnish. When you are

MAKING A MARSH



The marsh base was made from a single layer of thick brown cardboard. A mixture of sand, PVA and water was used to model the contours of the marsh, then the edges of the base were built up with filler. The clumps of grass were stuck into the sand/PVA mix while it was drying. The water was painted before the marsh was painted and flocked.



FINISHING TOUCHES

If you feel inspired, there are all sorts of little extra details that can be added to your marsh such as rocks, rushes, pond animals, etc.



Notice the extra details that have been added to this marsh, such as reeds and stones - even a tiny frog!



satisfied with the water and the base is completely dry you can sculpt in the contours of the pools and islands with a mixture of sand and PVA. The sides of the base can be built up with filler. Paint the areas you want to flock with PVA and sprinkle green flock over them, shaking off the surplus when the glue is dry.

You now have a basic marsh which you can use as it is or further embellish it by adding stones and marsh plants. To represent reeds, cut short lengths of rope and fray out the strands to look like tufts of reed or long grass. Put a blob of glue where you want the tuft to be and press the end of the tuft into the glue. It's a good idea to use really tacky glue for this job, or wedge the tuft between a few small stones which you have already stuck down so that it stands upright as it dries. When dry, paint the tufts dark green and drybrush with a bright yellow green.

BURIAL MOUNDS

Burial mounds, or barrows, are made from a great pile of boulders heaped up over a treasure chamber. The chamber itself is made of huge slabs of stone and is sealed with another large slab as a door. The roofing slab and the door are usually visible among the pile of stones and may be carved with arcane runes.

Mounds like these are often the last resting places of Dwarf adventurers, Orc warlords, Chaos warriors, long forgotten Necromancers and Barbarian chiefs. Sealed within may be unimaginable horrors and untold treasures.

Making a burial mound is simple. First make a sturdy base by cutting out a roughly circular or oval shape from stiff card. If you've only got thin card, stick several layers together. The base should be strong enough to bear the weight of the model.

Make the mound with layers of thick card, as if you were building a small hill. When the layers are dry, fill in the slopes of the mound with filler, leaving one end slightly flat for the door.

The door of the burial mound can be made from modelling clay, a piece of polystyrene, or even a real stone, if you can find one the right shape. Glue the door into place,

and then arrange the smaller stones around it, starting from the bottom and working up. The lintel can be made from the same sort of materials as the door.

When the stones are dry, paint them over with PVA to bond them securely together.

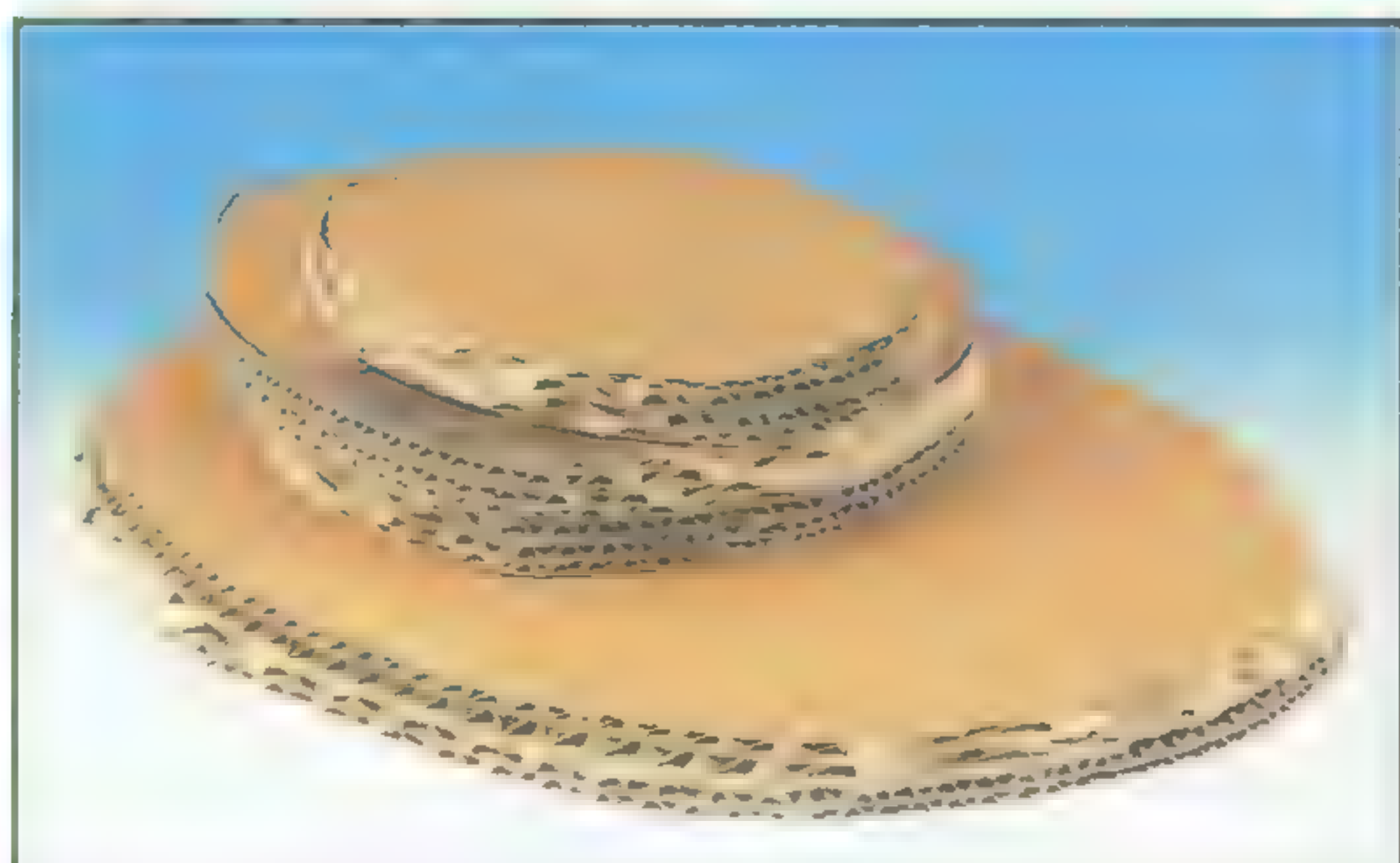
The burial mound can be painted and flocked in the normal way. Paint the stones a suitable colour such as dark greyish-blue then drybrush with lighter shades to give the effect of weathered boulders. The mound and the base can be painted green and flocked.



If you want to spend some more time on your burial mound, you can add extra details such as tiny stones and clumps of grass. You might even add a small bush or tree clinging to the side of the mound. The bigger stones and slabs could be decorated with runes or sigils to protect the dead and warn off thieves and intruders.

MAKING A BURIAL MOUND

Here you can see how the basic shape of the burial mound was made from overlapping layers of thick card. When the glue was dry, the sides of the mound were built up and filled in with all-purpose filler.



In the finished model, the mound has been painted and flocked, and finishing touches have been added such as tiny stones and a bush.

ROCKS AND STONES

Piles of rocks and stones look good on almost any battlefield, from woods and forests to deserts and rocky wastelands. When you've made some clusters of boulders and rocks, why not try your hand at a cairn, a dolmen or small group of standing stones?

CAIRNS

A cairn is a pile of stones that acts as a waymarker or serves to mark a particular place such as a grave or a sacred site.

Cairns are easy to build, and add character to a Warhammer battleground. They can be as simple as a pile of stones, but we've made ours a bit more interesting by topping it off with a large flat stone.

First, you'll need a sturdy base. Cut out a roughly circular or oval shape from thick card. If you just want a simple pile of stones the base needn't be too big - about 5cm across should be about right. For a more elaborate cairn the base can be a bit larger.

For the core of the cairn, you'll need to mould a lump of modelling clay into a squat cone with a slightly flattened top. For a lightweight alternative you could use expanded polystyrene. Glue this to the base, and when it's dry, glue small stones or gravel up the sides of the core. Finally, make a cap stone from modelling clay or polystyrene and glue it to the top of the rock pile.

When the glue is dry paint the entire mound with PVA to bond the boulders together. When this is dry, paint the base green, and coat it with flock. The stones can be painted in a suitable colour such as dark grey, drybrushed with lighter shades to give the effect of weathered boulders.

Your cairn is now finished, but you can always go on to add more little details such as clumps of grass or moss between the stones, or runes carved or painted on the rocks.

MAKING A CAIRN



1 The base, core and top of this cairn have been made from polystyrene. Real stones are being glued up the sides of the rocky mound.



2 After painting and drybrushing, the base was finished off in the normal way by painting and drybrushing.

BOULDERS & ROCKS

Using the basic techniques we've outlined above and in the Stone Circles section over the page, you can make all sorts of rocky terrain for your games. There are endless possibilities, from rocky outcrops, stone monoliths, dolmens, even single boulders.

Model rocks and boulders can be made from pebbles, real stones or pieces of stone, modelling clay or polystyrene. For very small stones you can use gravel or coarse sand.

You'll find more ideas for rocks in the Warhammer 40,000 section.



This clump of two rocks was made from real stones painted with texture paint.



Above: A slightly larger clump of rocks. Notice how the scattering of tiny stones (made from crushed coral) round the base of the stones makes them look more realistic.



Left: The patch of tall grass on the edge of this set of rocks was made from frayed rope painted green.

STONE CIRCLES

Stone circles are a common sight in the Old World. They can consist of anything from a crude ring of four or five individual standing stones to huge, elaborate circles of carved stone blocks topped by lintel stones. Stone circles are invariably places of great magic power, and are used by wizards, followers of Chaos, Elves and other races for their arcane rituals.

To make a stone circle, cut out a roughly circular base from strong card, or make one by sticking several layers of thin card together. You will need about half a dozen suitable stones, which can either be real ones, or shaped from modelling clay or polystyrene.

Stick the stones in a circle on the base. Small stones can be stuck at the bottom of the larger stones to wedge them upright. Some stones can be stuck as though they have fallen down. You can leave the centre of the circle empty, or add a low altar mound, a lone monolith, a dolmen, or even a firepit, as we've done in our stone circle.

When the stones are securely stuck onto the base, paint the base green. Then paint the stones so they look like weathered rock, as described in the Rocks and Stones section. At this stage you might want to paint runes or arcane engraved designs on some of the stones. When they are dry, paint the base again with PVA glue and scatter green flock over it.

The stone circle is now complete but it will look better if it is enhanced with bushes and tufts of grass stuck around the base of the stones to make it look suitably ancient and overgrown.



This dolmen was made from polystyrene 'rocks'.

MAKING A STONE CIRCLE



The stones on this stone circle were made from modelling clay - the advantage of doing this is that you can make the bases flat so they can be more easily attached to the base. The sides of the base and the raised circular area are being covered with filler to fill in the holes and smooth them over.



In the finished model, you can see that small areas of loose stone have been added round the bases of the large stones.

WARHAMMER BUILDINGS

Buildings can be the most impressive part of your terrain collection. If you make two or three small buildings to start with you will be able to use the same techniques to make larger and more elaborate buildings later. Eventually you will have built enough buildings for your own small village!

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Hut



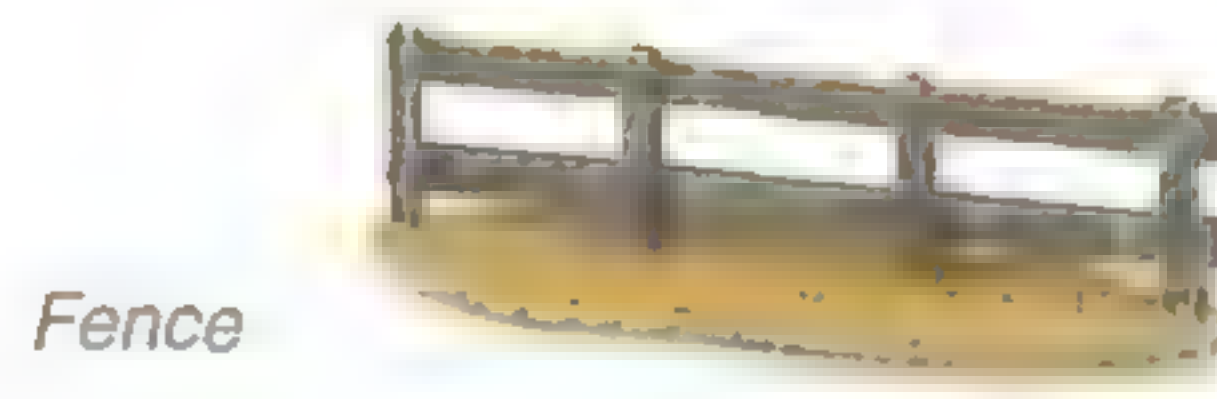
Peasant Cottage



Watchtower



Stone Wall



Fence



Hedge



HUTS

Crude, circular huts are primitive dwellings used by unsophisticated creatures like Orcs and Goblins. The walls of these huts would be made of sun-baked mud bricks or wattle and daub, while the roofs are usually made from a thatch of branches, reeds or straw. Clusters of these huts are about as far as Orcs go by way of settlements as they have neither the ability nor the interest to make permanent dwelling places.

Circular huts are very easy to model. To make the hut you will need a thick cardboard tube. The one we used was 8cm in diameter. Cut a ring from the tube to form the circular wall of the hut. The height of the wall should be appropriate for your models; the walls for the hut we made were 6cm high.

Next cut a rectangular doorway in the wall of the hut with a pair of scissors. You should now have a ring-shaped strip of cardboard with a gap for the hut's door. A simple door can be made from card or balsa wood, painted brown (see page 48 for help making doors).

Cut out a circular base for the hut from thick card. The base need only be slightly larger than the circular wall. Stick the hut wall onto the base.

The conical roof of the hut is made by cutting out a circle of thin card.

MAKING A HUT



1 The basic form of the hut is complete, though no details have been added.

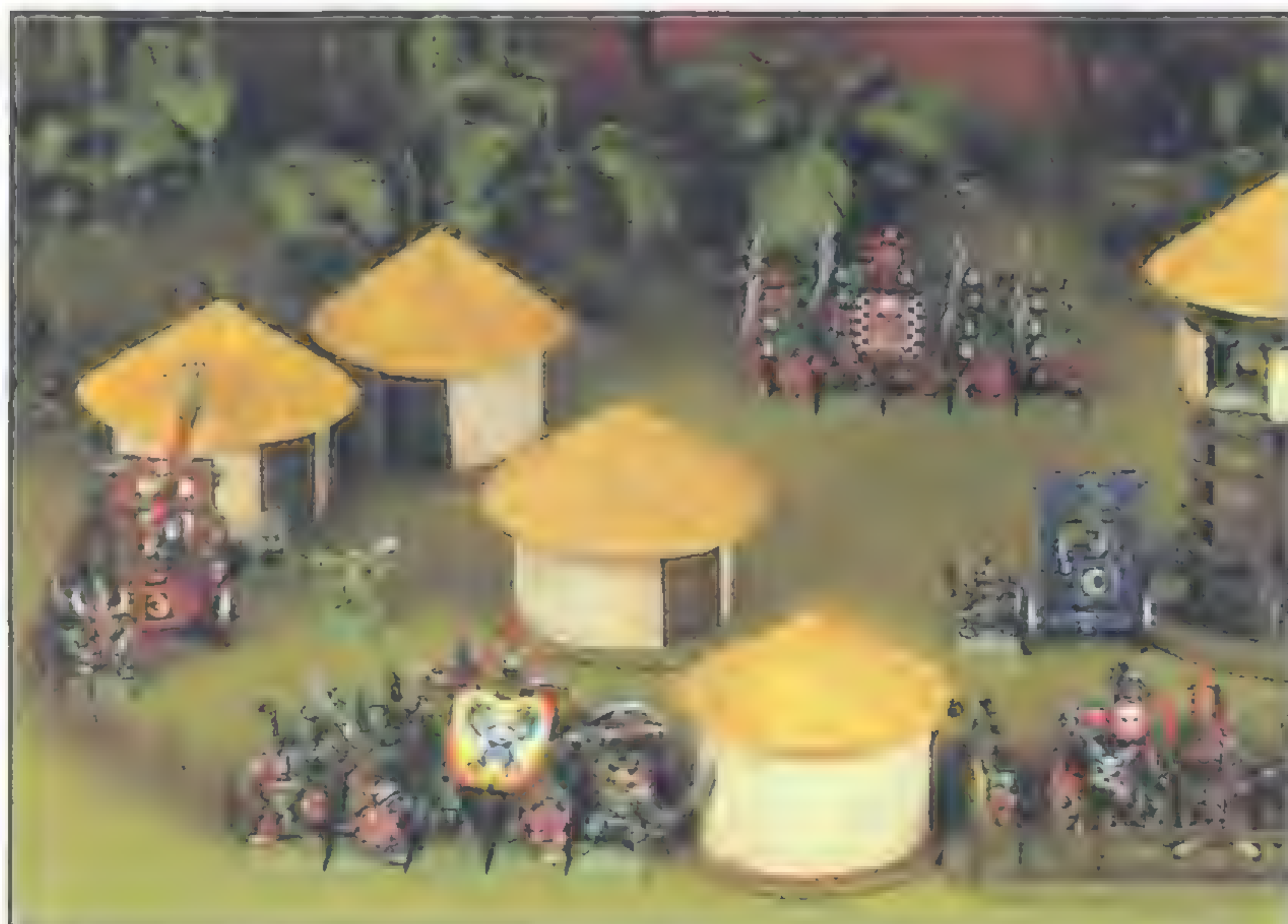


2 The finished hut. The walls have been lightly textured with filler before painting and drybrushing.

The circle should be wider than the diameter of the hut wall by at least 2.5cm. When you've done this, cut a slit from the centre of the circle to the edge. Carefully bend and curve the circular disc of card so that one side of the slit overlaps

the other until you have a conical roof wide enough to sit on the hut wall. When you're satisfied with the shape of the roof, glue the overlapping edges together. It's a good idea to use tape to temporarily hold the roof in shape on the inside of the cone while the glue is drying. When the cone is dry, it can be glued onto the walls of the hut.

You now have a basic hut which you can paint straight away or add some more detail to. The walls can be painted to represent mud, clay, wattle (interwoven twigs) or crude stonework. The roof can be painted to look like thatch, turf or brushwood. If you want to add further detail you could stick twigs onto the card form of the hut or use modelling clay to sculpt thatch over the conical roof. The effect of a crude stone wall can be obtained by sticking irregular bits of thin card on the hut wall as described already for making a stone walled cottage.



WATCH-TOWER

Watch-towers are found in many settlements in border regions and on the coast where the inhabitants need to keep a look out for raiders or invaders. Making a watch-tower is very similar to making a hut - it's just a bit taller!

A good watch-tower will either be entirely built of stone or will have a stone base and timber top, so that the enemy cannot burn it down too easily! Watch-towers are usually tall buildings, with a circular or square shaped cross-section. They may sometimes have a roof, especially in cold or rainy regions, because the lookouts will need to stay in the tower for several days and nights at a time.

A stiff cardboard tube is the ideal basis for making a simple circular watch-tower. Choose a tube which

is the right size for the tower you want to make. A tower need only be 10-15cm high to be effective, especially if it is built on a hill.

Cut out a circular base for the tower, slightly wider than the end of the tube. Use stiff card or several layers of thin card for a strong base.

You can stick irregular pieces of card over the tower walls to represent stones or paint the tower to look like masonry. Textured paint is good for this as it leaves a slightly rough finish which can then be drybrushed.

Make a conical roof for the tower in the same way as described for the hut and stick it on the top of the tower. If you want a tiled rather than a thatched roof, stick small squares of card onto the roof to look like slates, and paint them in an appropriate colour such as dark grey or terracotta.

Window slits can be painted on, or cut into the body of the tube. A door can be stuck on the outside of the building, or you can cut a rectangular hole in the bottom of the tower and stick the door across this from the inside, as we have for this watch-tower.

MAKING A WATCH-TOWER



Before gluing on the roof, or sticking the tower to the base, holes were cut out for the windows and the doors. Pieces of card are being stuck to the walls to give the impression of stones



The finished watch-tower. The walls have been gently textured with filler before painting and drybrushing.



The tiled roof was made from lots and lots of card tiles.



The door was made from strips of card, and the door handle was made from wire.

PEASANT COTTAGE

The peasant cottage is one of the simplest buildings to make. Such structures can be found all over the Old World, from Bretonnia to Kislev where they are the commonest type of building to be seen in the landscape. Most of the buildings in a rural village will be dwellings of this kind and so will many of the poorer houses in towns and cities.



A peasant cottage is basically a rectangular building with a pitched roof. There is only one door and few if any windows. It usually lacks a chimney, and has just a hole in the roof to let out the smoke of the hearth. Inside there is only one big room.

The peasants live in the building with some of their animals and sleeping areas are either up in the rafters or separated from the rest of the house by wooden or wattle screens. Inside, the house is dark, drafty and smoky. The walls are

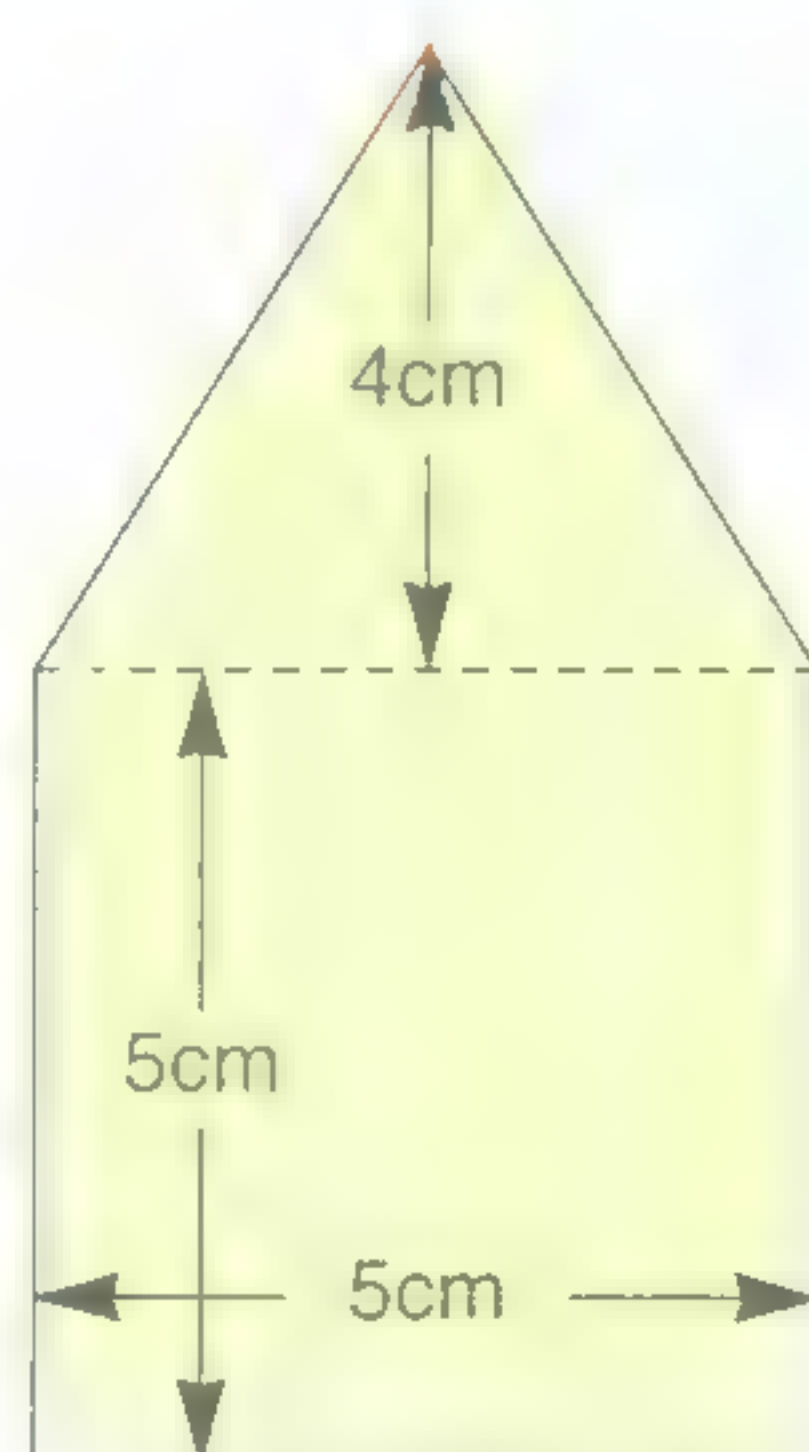
low and made of boulders, crude masonry, logs or wattle and daub (a wall of woven twigs plastered with mud and straw). If there is a window it will usually be a simple opening closed by a wooden shutter. The door is made from wooden planks. The roof may be thatched, or made of overlapping planks, tiles or slates.

MAKING A COTTAGE

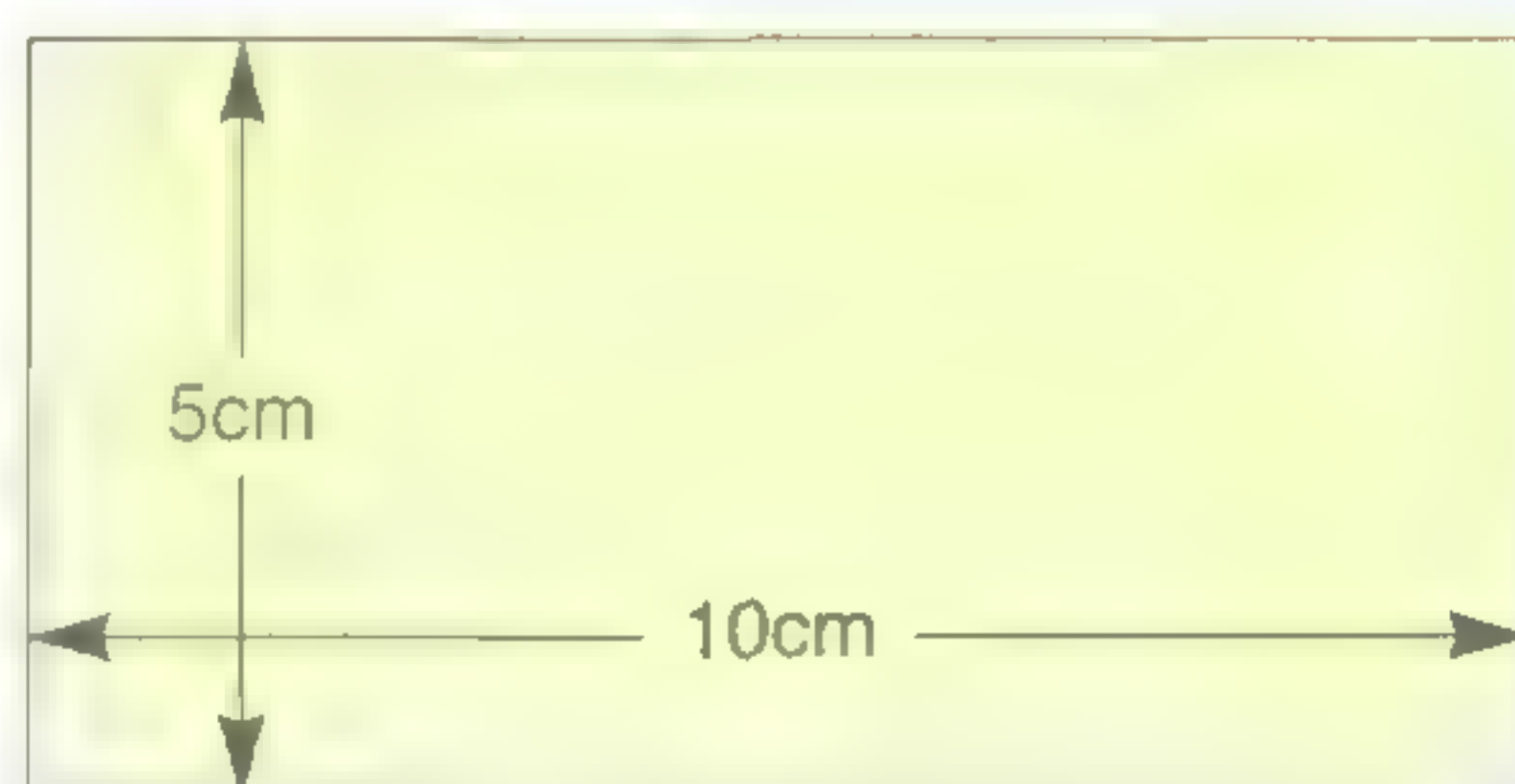
First you will need some thin cardboard. The big panels cut from

a cereal box can be used as can any card of at least the same thickness from other packaging. Using a ruler and pencil draw a rectangle 10cm long and 5cm tall representing one side of the cottage. Draw a door in the centre. This is the front of the cottage. For the back of the cottage, draw another rectangle identical to the first but without the door. Now draw a square 5cm long and 5cm high. Mark a point on the top line midway along the square. Mark another point directly above this

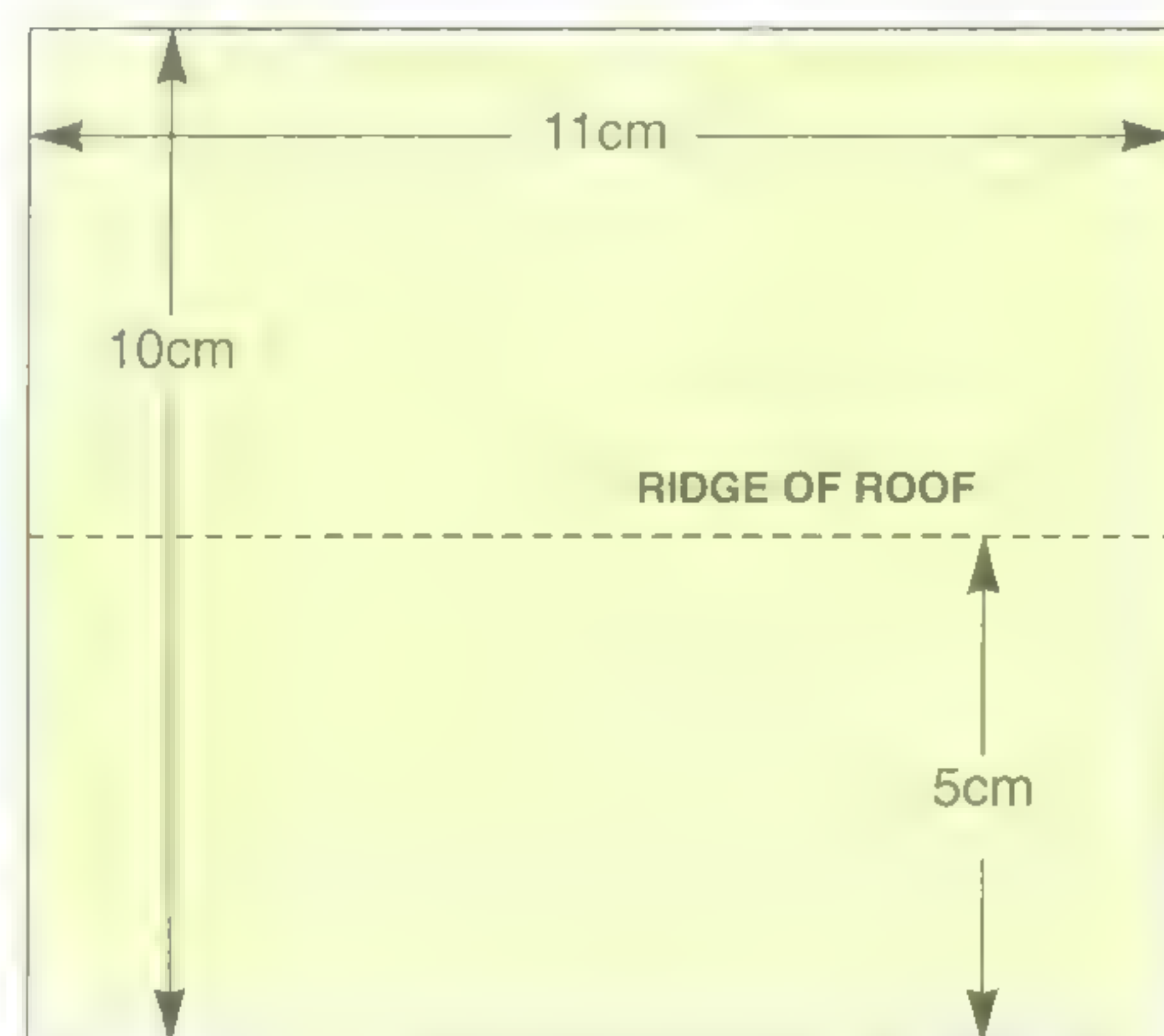
PLANNING OUT THE COTTAGE



COTTAGE SIDE



COTTAGE FRONT/BACK



COTTAGE ROOF

4cm above the line. Join this point with two sloping lines to the top corners of the square. You now have a gable end for the cottage. Draw another end exactly like this so the cottage will have a steeply sloping roof. Using a thicker piece of card, or several thin sheets stuck together, make a base board for the cottage. This should be slightly larger than a 10cm by 5cm rectangle.

Now cut out the four sides of the cottage. If you want you can cut out the door, otherwise you can simply paint it to look like a door later on. Using sticky tape join the four sides of the cottage together at the corners. You will now have a cottage-shaped 'box'. Instead of tape, you could glue tabs of cardboard inside the corners of the cottage for extra strength and even on the outside of the corners as well. The structure will still be fairly flimsy at this stage so glue the bottom edges and position the cottage on its base.

When the cottage is stuck firm on its base, draw a rectangle 11cm by 5cm onto a sheet of thin cardboard for the roof section. Draw a line lengthways straight down the middle to mark the ridge of the roof. Cut out the rectangle and fold it along the ridge line. You may need to score the line gently with a knife to make a neat fold. Now you



The two sides and ends of the cottage have been put together and fastened with sellotape. Note that the building has been glued onto a base to give it stability and keep the walls square.

will have a sort of tent-like shape which will form the roof of the cottage. To fasten it to the rest of the building, glue the upper edges of the cottage and position the roof section on top with the ridge linking the pointed gables at each end of the cottage. Tape or hold the roof on firmly until it has stuck. The roof will overlap the walls of the cottage slightly giving it realistic eaves just like a real building.

The basic shape of the cottage is now completed. At this stage you can simply paint any details that you want on the basic building or go a stage further and stick details on before painting.

corners of the cottage to look like strong supporting struts. Stick other strips at various intervals along the sides of the building. Stick one big strip at each end in the middle of the gable end section of the cottage to look like a timber holding up the roof. Smaller strips can be added between the larger ones in a random manner to look like struts and cross timbers or to mark the frames of door or windows. The photos of card buildings in this section will give you some ideas.

Paint the strips black or a dark wood colour and paint the areas between them yellow or white to look like whitewashed mud or clay.

A log cottage is built with logs laid lengthwise or set upright in the ground. The roof rests on the wall of logs or upright posts. To make a log cottage, use twigs or bits of balsa wood and cut them to the right length by measuring against the walls of the building. Stick them to the cardboard walls until all the walls are covered except for a gap for the door. Don't worry about windows, just make it dark and dank! If your twigs look realistic enough you will not even need to paint the walls.

Stone cottages are built from blocks of stone, and are most common in mountainous regions. This effect can be given to the model by cutting strips of card and then cutting these into numerous short sections until you have loads of bits of card about 15mm long and 6mm high or smaller. These represent

DETAILS & PAINTING

The basic cottage can be enhanced in various different ways, which all give a distinct character to the building. You now need to decide whether you want it to be a timber-framed cottage, a log cabin or a dry-stone cottage.

A timber-framed cottage is a structure built with a wooden framework, and is the easiest option to start off with. The gaps in the framework are filled with wattle and daub panels. This gives the appearance of a black and white cottage as can be seen in many rural villages in England today. To replicate this effect on a model you can use strips of cardboard, balsa wood or even matchsticks. Stick the strips of cardboard at the



This window has been made from strips of card stuck onto the walls of the building.

Making roof tiles. First cut a number of thin strips of card the same length of the roof. Cut into the strips at intervals to make the 'tiles'.



Glue the strips onto the roof starting at the bottom and working up towards the top.



blocks of stone, so they don't need to be all the same size and will look better if they are irregular in shape.

Paint glue over the side of the cottage and stick the 'stones' on to it in courses as if they were bricks. Fit them together in any way you like, a random arrangement will look more primitive while regular lines will look well built. Use bigger bits for the corners, foundations and lintels above doors and windows. When dry, the walls are painted a dark stone colour and drybrushed a lighter stone colour.

Roofs

Now decide whether you want the roof of the cottage to be thatched, tiled or made of timber planks.

A plank roof is the quickest option. Simply cut lots of thin strips of card as long as the roof is wide. Stick the strips onto the roof, starting at the bottom and working up. Overlap each card 'plank' over the one below it. Vary the length of the strips in each row to look like planks of different length. Finish the roof by painting it dark brown and drybrushing it light brown to look like old weathered wood.

A tiled or slate roof is made in a similar way to the plank roof, and only involves a little more work. Cut a number of card strips, as described for making a plank roof.

Cut nicks along one edge of the strips to represent the tiles. Stick the strips onto the roof, starting at the bottom and working upwards, overlapping the lower layers. The ridge of the roof is made from a slightly wider card strip folded in half, and serrated along both edges. Paint the finished roof dark red or terracotta to represent clay tiles or greyish-blue to represent slates, then drybrush in a lighter shade.

Curved tiles are an interesting variation, though they take more time to cut out. Modelling perfectionists have even been known to cut out the tiles individually!

The roof of a thatched cottage is made from bundles of straw or reeds. This can be tricky to model, but you could try covering the roof with modelling clay and shaping it with a spatula. You could also try cutting sections of string, unravelling it and sticking it on the roof in overlapping layers.

The simplest method is to paint the thatch. First paint the roof yellow or yellow-brown, then paint vertical streaks of darker and lighter yellow or yellow-brown to make it look thatched.

Doors & Windows

To make a door, cut out a small rectangle of thin card, about 2.5cm high and 1.5cm wide. Stick three or four strips of thin card on this side by side to look like planks. The door can be stuck on any side of the cottage. If you cut out a doorway in the side of the cottage, the door can be stuck so that it appears to be open.

The windows of a peasant cottage seldom if ever contain window glass. Instead they are closed by wooden shutters. These are made in the same way as doors, except they are much smaller. Shutters can be stuck on singly or in pairs and can be stuck down to be shut or open if you cut the window opening in the side of the cottage.



The finished cottage

FINISHING TOUCHES

When you've made one or two peasant cottages, why not have a go at designing your own buildings? It's very easy to make quite impressive buildings just by making two or three different sized buildings and joining them together. This way, a large house and a medium-sized house can become a large house with a wing. Attach a long, low building to a house and you'll end up with a farmhouse with an adjoining stable or barn.

You can also experiment with adding extra detail to your buildings. Try different ways of making roofs, doors and windows. Just the colours you paint the roofs and walls of your buildings can make them look quite different.

Most houses benefit from a chimney, which can be easily made from a few pieces of card and a plastic straw. If you really take to cardboard engineering, you can add buttresses to the side of the walls, or small lean-to's to represent privies, sheds or animal shelters.

Roofs offer endless scope for experimentation, and if you are feeling particularly adventurous you could design them so they can be lifted on and off so you can place models inside the building. Tiles can be all different colours and shapes, but roofs can also be made from planks of wood or even thatched with straw or reeds.

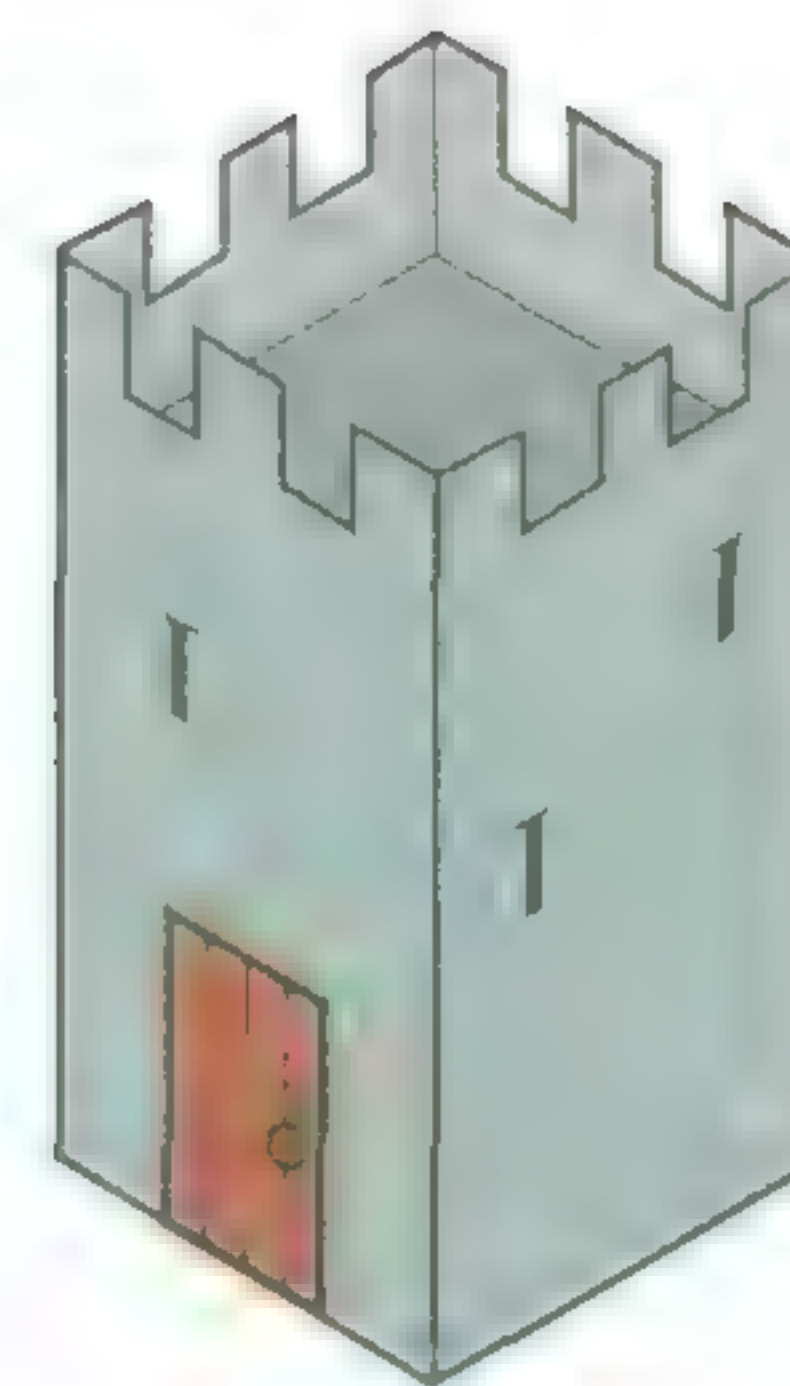
Houses and towers with overhanging upper levels are an interesting variation, and typical of the more civilised parts of the Old World such as the Empire and Bretonnia.



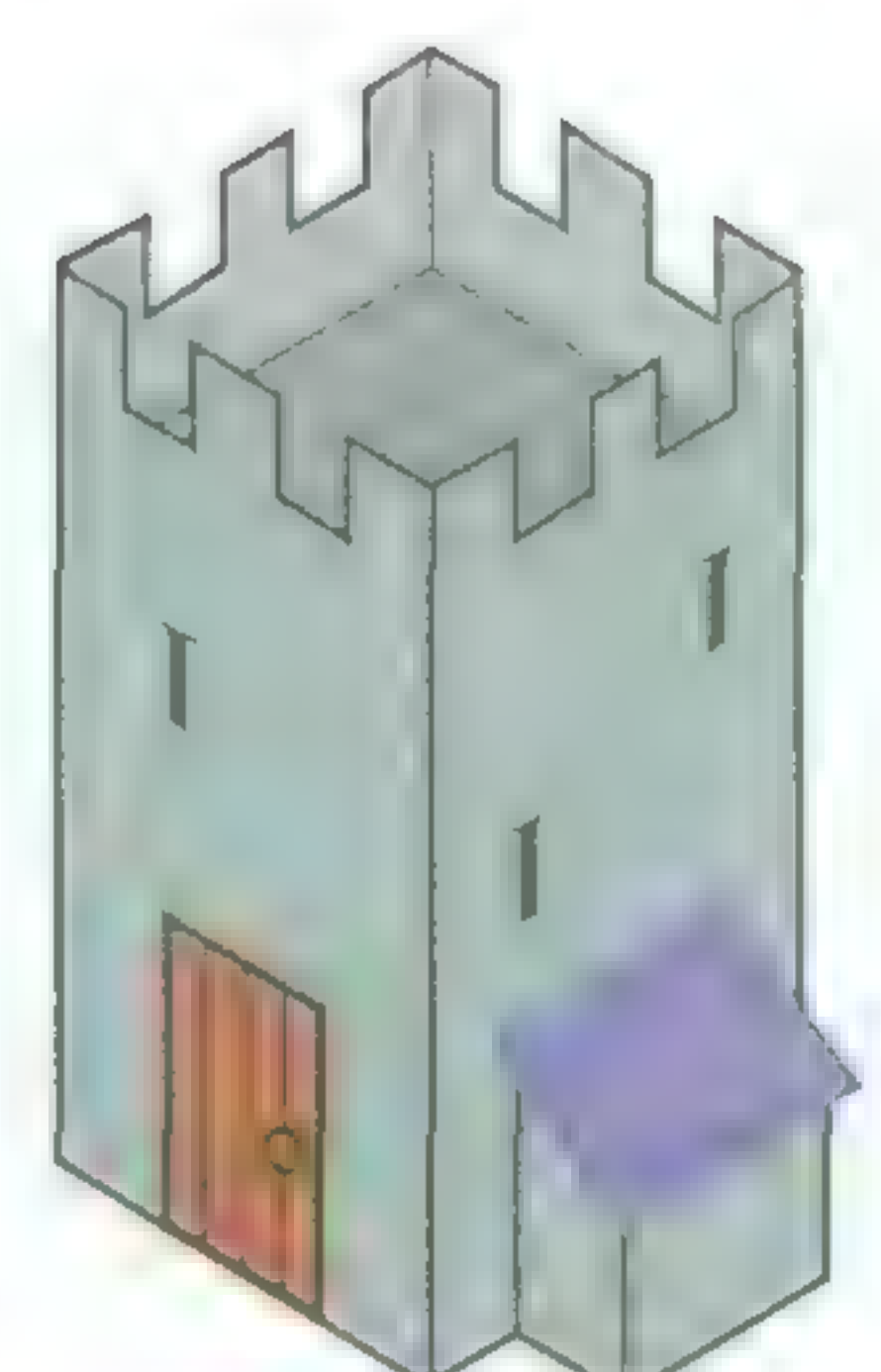
Above left: A basic house with a pitched roof.



Above right: The same house with a chimney and a lean-to.



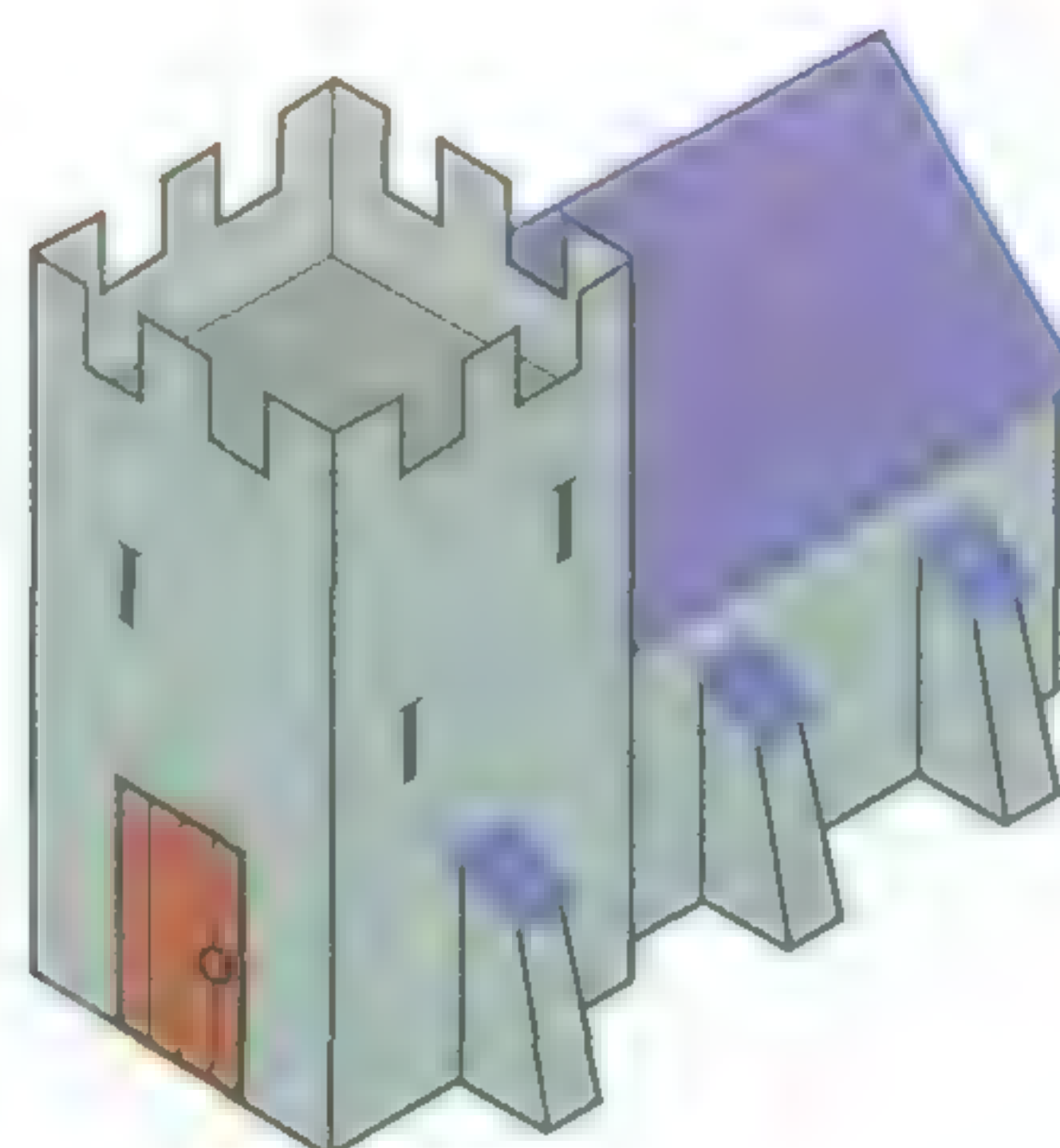
Above left: A square keep with a crenellated roof.



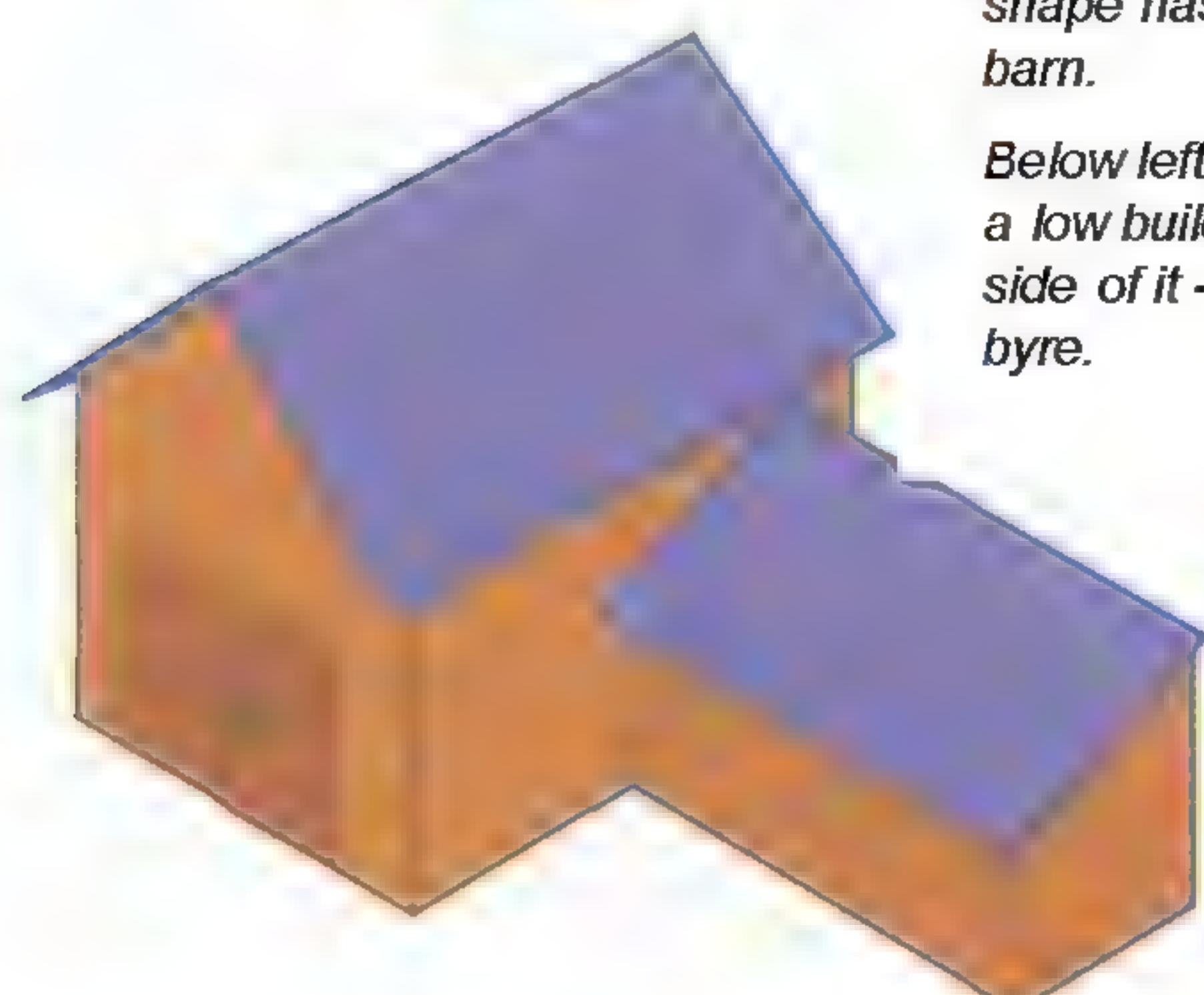
Above right: The same keep with a small adjoining structure.



Above left: The basic house shape has been used for a barn.



Left: A basic house with a pitched roof added to the square keep makes a church. Bastions complete the effect.



Below left: The barn has had a low building added to the side of it - a stable or cow byre.



The basic cottage has been extended with a lean-to at the back and a chimney on the roof.

MAKING DOORS

Most of the buildings in this book require a door of some kind. Doors can be made from card, balsa wood, or a combination of both materials.

The most simple kind of door is made from one piece of balsa wood. Cut a rectangle the size you want, then score lines down it with a knife or a ballpoint pen to represent the planks. All you need to do afterwards is paint the door. You'll find the natural grain of the balsa wood shows through the paint to give a surprisingly realistic finish.

The other sort of basic door is made from layers of card or balsa wood. To start with, you'll need to cut a rectangle of card for the back of the door. If you intend to cut a hole in the building wall, and stick the door to the inside so that it faces out, you'll need to make the door slightly larger than the aperture so you can stick it to the wall.

Cut a number of thin strips of card or thin balsa wood the same height as the door back, and glue them lengthways down the door to give the impression of planks. If you look at the doors in this book you'll see that between four and six vertical planks looks about right.

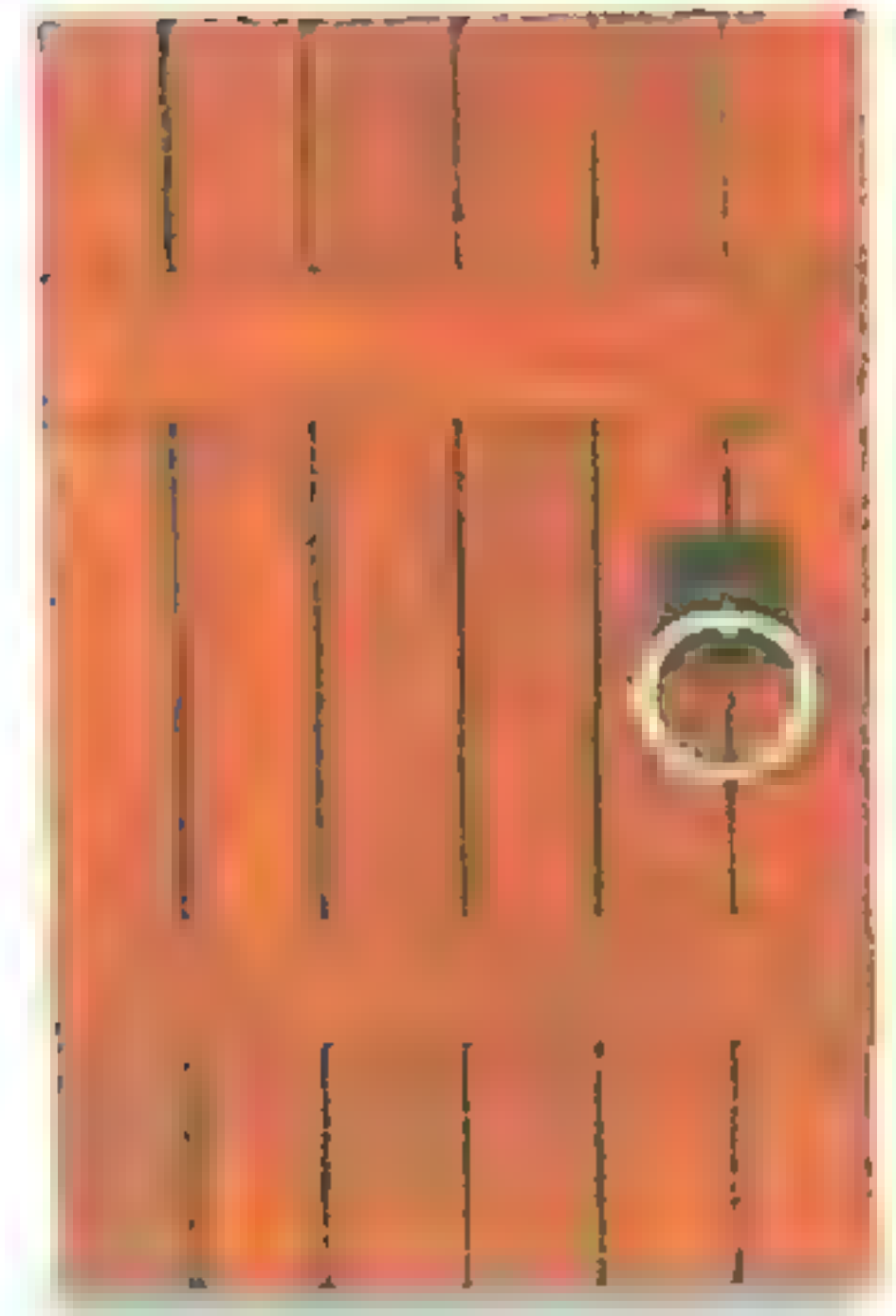
For the two cross pieces you'll need two more thin strips of card or balsa cut to the same width as the door. Glue these across the door to form the cross beams.

If you want to add a simple handle, the easiest way to make one is from fuse wire. Fuse wire comes in many different thicknesses, and is soft and easy to bend and cut. You can either attach your handle straight to the door, or make a base plate first from a square of thin card.

To make the door ring you could use a link from a piece of jewellery chain, or make one from fuse wire. To make a ring, wrap a length of wire round a pencil or a paint brush. Slide off the coils, and cut across them with wire snips to get a number of wire rings.

You can glue the ring straight onto the door, or fix it to the door with another piece of wire. To do this, take a piece of wire and bend the very end right over into a tight hook. There should be just enough space in the hook to insert the door handle ring. Make a hole in the door where you want the handle to be, and feed the straight end of the bent piece of wire through it. Ease the wire ring into place under the wire hook, and adjust them so they fit snugly together on the door. Glue the wire into place, and when it's dry you can trim off any wire that is protruding from the back of the door.

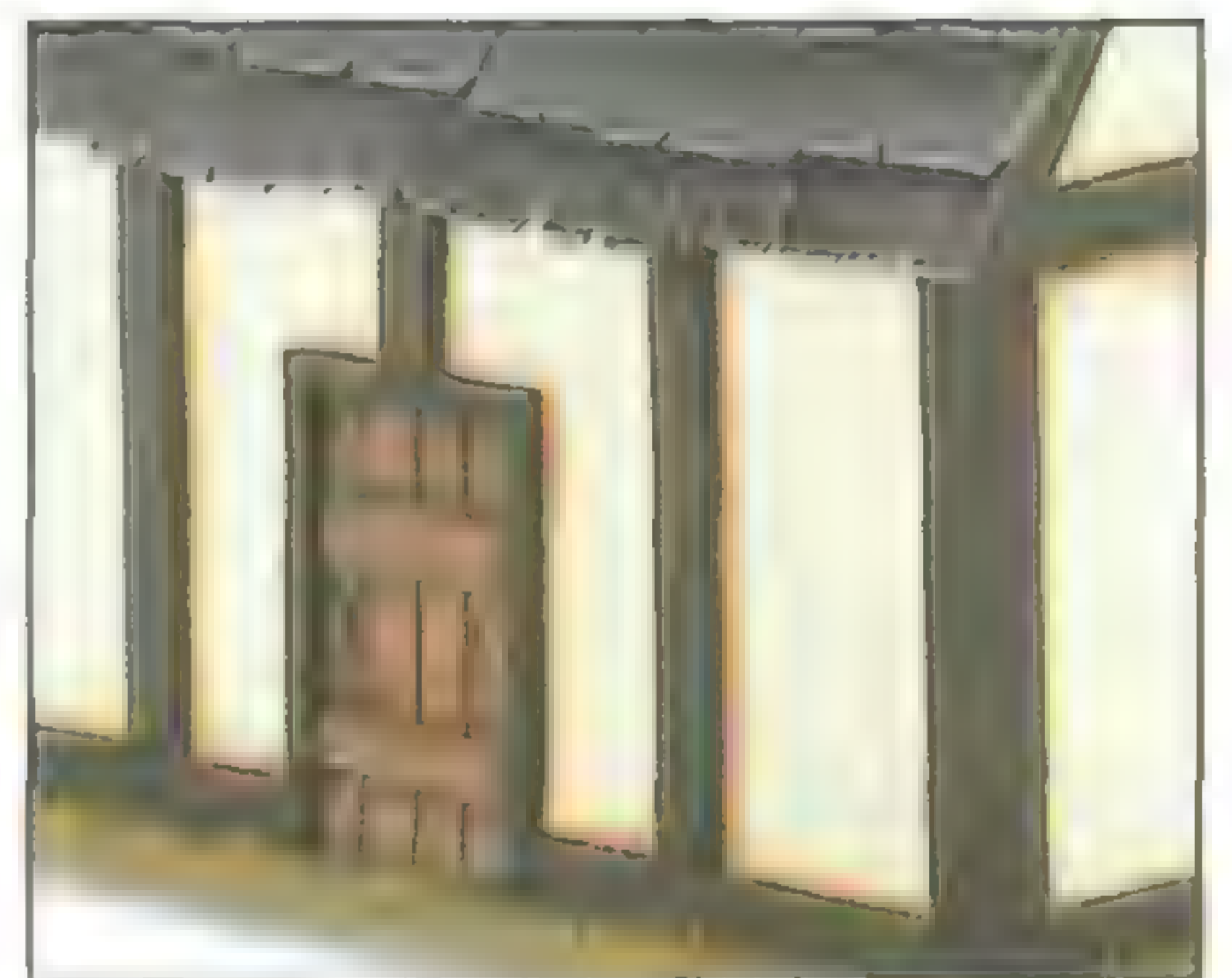
How you attach the door ring does depend to an extent on the thickness of the door. The method we've given above works well on doors made from thick card or



This door was made entirely from card. A rough coat of brown paint gives an impression of wood grain.

balsa wood. If you're using thin card, you may find it easier to make the attaching wire into a loop, then pull both ends through the hole in the door. The two ends can then be bent out across the door back, and glued or taped into place.

Once you've got the hang of making doors, you can try different materials, and experiment with adding extra details such as studs, hinges and even door knockers!



The door of this cottage was made entirely from thin card. Notice how the door handle has also been made from a tiny card rectangle.

MAKING A WIRE RING



Wrap some fuse wire round a pen or the handle of a paint brush.



Cut through the links with a pair of wire snips to make a number of wire rings.



The addition of a diagonal cross-piece is an interesting yet simple variation on the basic door. The doorknob has been painted on.

MODELLING MASTERCLASS – Doors and Windows

There are endless possible variations for fantasy windows, from simple wooden shutters to elaborate leaded glass windows. Doors too can come in all sorts of shapes and sizes, and can be made from wood, stone or even metal.



The arrow slit in the side of this tower was simply cut straight through the building wall.



These large wooden doors lead to a barn. Each side of the door was made from one piece of balsa wood, carefully scored with a knife to represent the individual planks of wood.



Privy door. Door handles can be made from loops of wire or bits of cheap jewellery.



Entrance to a burial chamber. The door is a metal Citadel miniature, painted and modelled into the mound.



These simple yet effective windows were made from wire mesh painted black and drybrushed silver. A hole was cut in the building wall, and the window was glued on the inside of the structure, facing out. It's a good idea to do this sort of thing before putting the roof on!



Studs and rivets can be made by cutting discs of the thicker sizes of plastic rodding.



Door of a High Elf tower. The curved door jamb was made from plastic card. The jewel was edged with thin, flexible plastic rodding, also known as micro-strip. This comes in a variety of diameters, and is invaluable for advanced modelling projects.



Inn door. Door hinges can be made from pieces of plastic card stuck onto the door, painted black, and drybrushed in a metallic paint such as silver or brass.

RUINED TEMPLE

There are many temples of various kinds scattered throughout the Known World. There are more which are in ruins than there are still intact and in use, since old temples are constantly being fought over and ransacked for treasure.



The temples that last longest are those which are securely protected within the walls of cities and strongholds. Out in the wilderness and the border regions where most battles are fought, the temples you are most likely to encounter are either humble rural shrines or old ruins. Nevertheless, the ruins themselves are often fought over by forces seeking treasure hidden in the crypts.

A ruined temple is a particularly interesting and impressive terrain

feature for the battlefield. A temple provides a good place to hide troops and monsters and can include platforms at different levels so that it can combine the effects of a building, walls and a hill at the same time.

To make a ruined temple, cut out a rectangular base of thick card or whatever basing material you prefer and construct a base as described in the Making Bases section. When this is done, but before painting and finishing off

the base, add the structure of the ruin.

Most temples are built on a pediment - a raised stone platform usually with steps leading up to it. To make one of these cut out a rectangle of thick card, polystyrene tile or cork tile and glue it to the base. You may need to use several layers of these materials to raise the pediment to a good height.

You can make the platform in stepped layers, a bit like a stepped pyramid (see pages 72-73). Each layer is larger than the layer above it, and each step should be wide enough for a model's base. Models can then stand on the steps during the game. Alternatively, steps of this kind can be added to just one end of the platform.

When you have built the platform to the desired height you will have a platform on top. This is where the ruins of the actual temple building will be. The building can be as ruined or complete as you like, but it is easier and perhaps better to make a ruined shell - a hollow building with the walls reduced to the height of a model's shoulders with higher bits here and there. Use thick card, balsa wood, polystyrene or cork tile to make the ruined walls.



The raised base of the temple was made from layers of thick card. The paving slabs were cut from thin card and glued onto the pediment. The ruined wall sections were made from pieces of corrugated card set between sawn-off sections of dowelling.

The walls will look best if they are quite thick. Cut out crude sections of the material with a flat edge for sticking to the platform. You might even cut out parts of doors and windows from these sections. To give the walls of our ruined temple extra interest and added stability we used short lengths of dowelling at the corners and half way down the two long sides.

When the ruined walls are stuck down the temple is virtually finished but there is much more you can do to embellish it. Before painting, you could stick rectangles of thin card on the platform to represent paving slabs. Irregular bits of thin card can be stuck to the ruined walls to give the impression of masonry construction. Corks can be stuck upright in rows to look like the bases of columns and others, perhaps broken in two can be stuck down here and there sideways to become tumbled columns. Parts of models, monster heads or even small beasts can be stuck beside the walls to look like sculptures, gargoyles and statues. If these are damaged or broken, so much the better! Even rough

THE FINISHED TEMPLE



stones and pebbles can be used to create rubble. These big fragments of masonry can be blended in by painting PVA glue around them and scattering small stones, gravel or sand on it to look like smaller rubble fragments and stone chippings.

Now the model can be painted. Paint it first with a dark stone colour such as greyish blue then drybrush with lighter shades. The

model will look all the better for being drybrushed carefully. At this stage details such as carvings or runes can be painted on and some elements such as statues can be picked out in brass, bronze, gold or rusty iron. You might even try to represent different colours of stone. Finally the base can be flocked and bushes, trees or tufts of grass added to make the ruin look old and overgrown.

MODELLING TIP - Making Movement Trays

Movement trays are a useful way to keep regiments of troops together on the battlefield. Instead of moving a whole unit of models individually, just push the movement tray along the tabletop.



To make a movement tray, pick the unit you want to make the tray for and line them up in ranks. Measure how wide the total unit is, and how deep. The base of the movement tray can be made from a piece of thick card about 1cm wider and deeper than this.

Glue thin strips of card along the outside of the tray, making sure there is still enough space inside to fit the models. The card edges will hold the models in place as you move them round the battlefield. When the card base is dry, paint it green, and flock the edges so they fit in with your wargames terrain and the models' bases.



WALLS, FENCES & HEDGES

Walls, fences and hedges are a common sight round settlements where they are used to mark out field boundaries and contain animals. They are quick to make, and look particularly appropriate arranged near buildings and around villages.

Walls, fences and hedges are best made in short lengths about 10cm long. Several can be placed next to each other to create longer obstacles or arranged to look like the boundaries of fields.

WALLS

There are two basic types of wall: stone walls made from boulders or roughly hewn blocks and walls made from bricks.

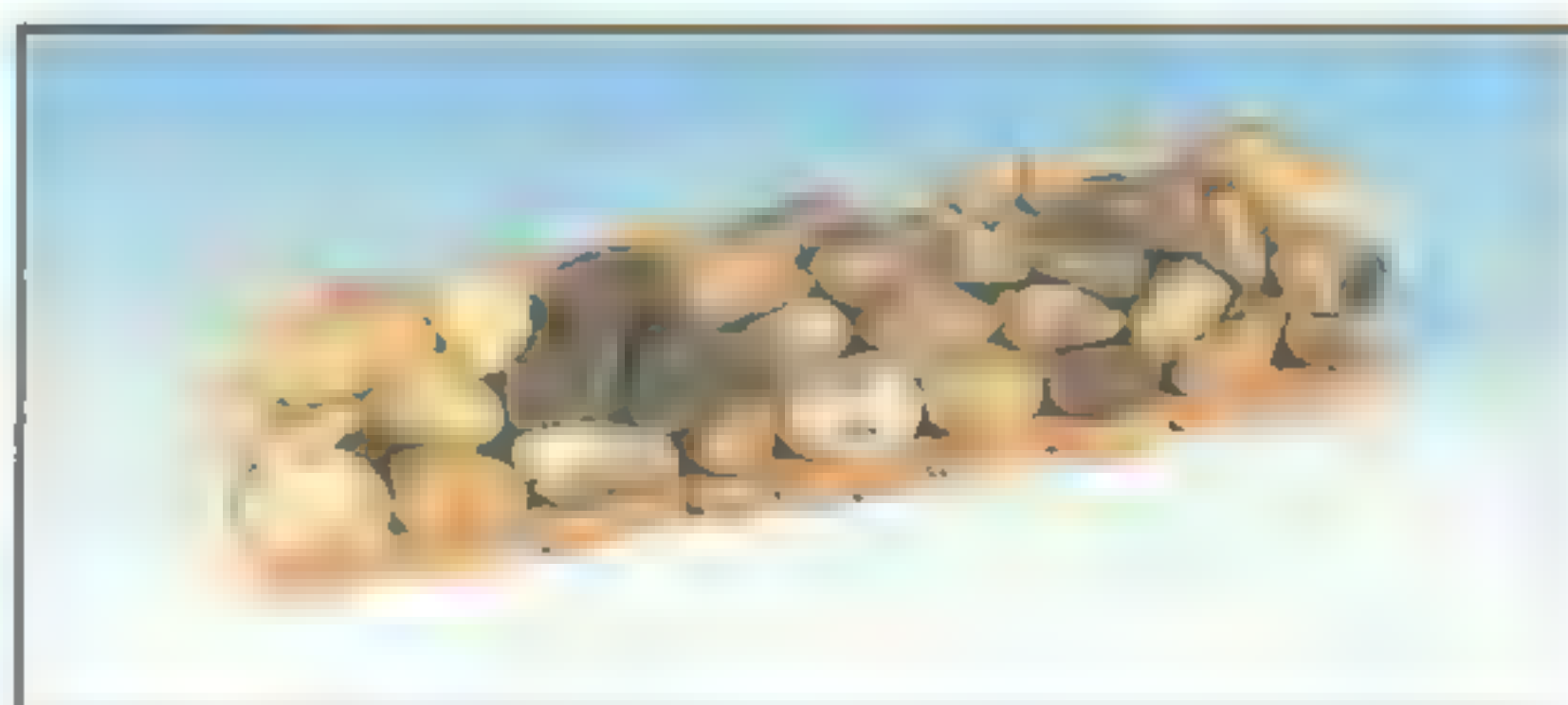
Whatever the type of wall, the base is made the same way.

Cut a strip of stiff strong card about 10cm long and 2.5cm wide. Several strips of thin card can be glued together to stiffen the base.

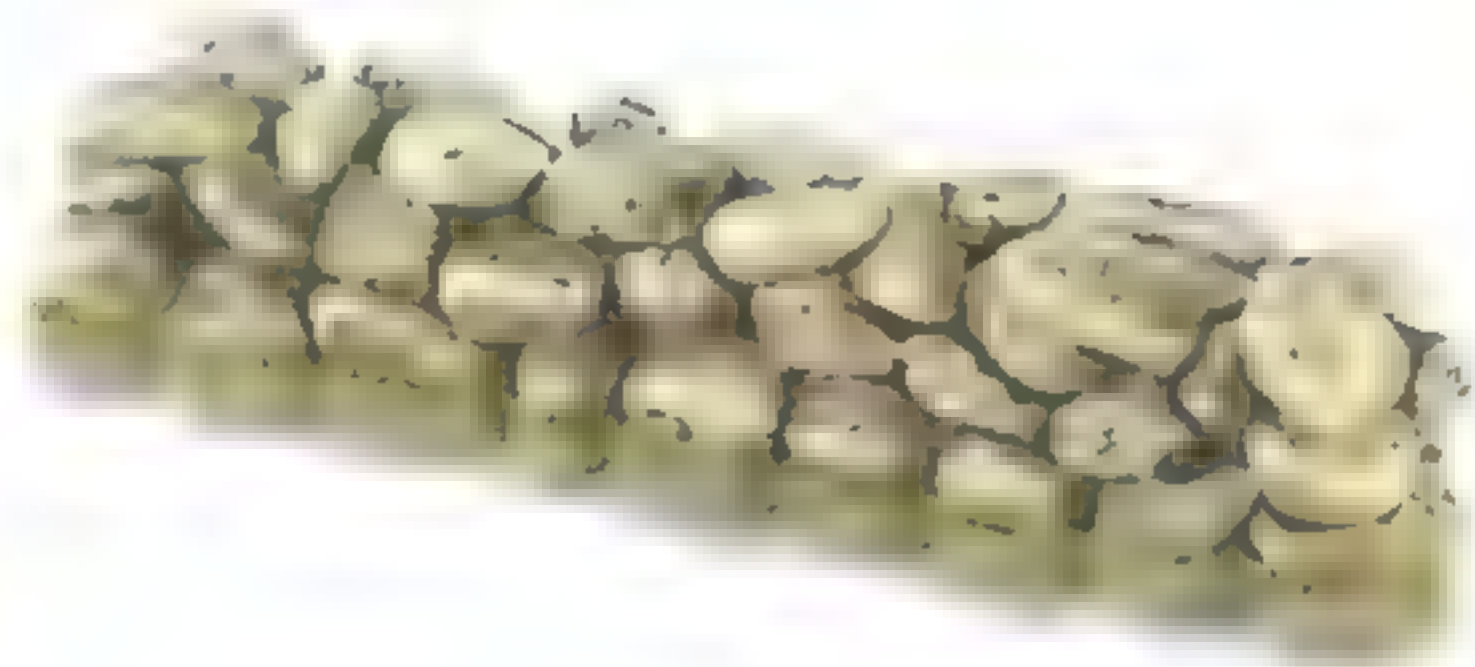
A stone wall can be made from small lumps of modelling clay. Shape the lumps into irregular boulders or blocks and lay them in courses along the length of the wall base. Use the tackiness of the clay to get them to stick together. The wall is thus built up like a real wall.

Do not make the wall too high or it will be weak and troops will not be able to shoot over it. The wall does not need to be higher than a model's shoulders. When the clay has dried, paint all over it with PVA, slightly diluted with water. This will help the blocks to adhere together so that the wall does not crumble away as you use it. The more you make the lumps overlap

MAKING A STONE WALL



1 This wall has been made from real pebbles glued onto a contoured strip of cork tile with PVA glue.

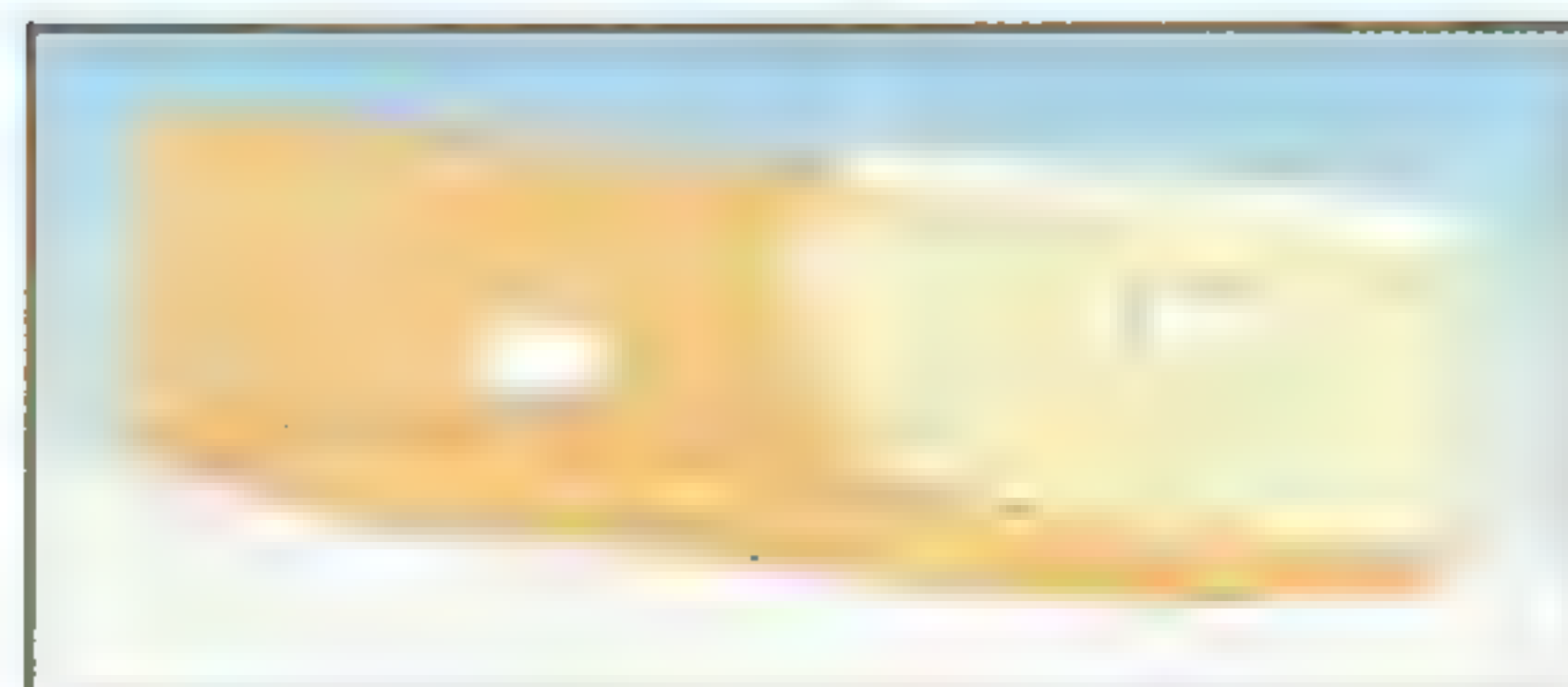


2 After the wall has been textured and painted, the base is painted and flocked

when you build the wall, the better they will adhere together when dry.

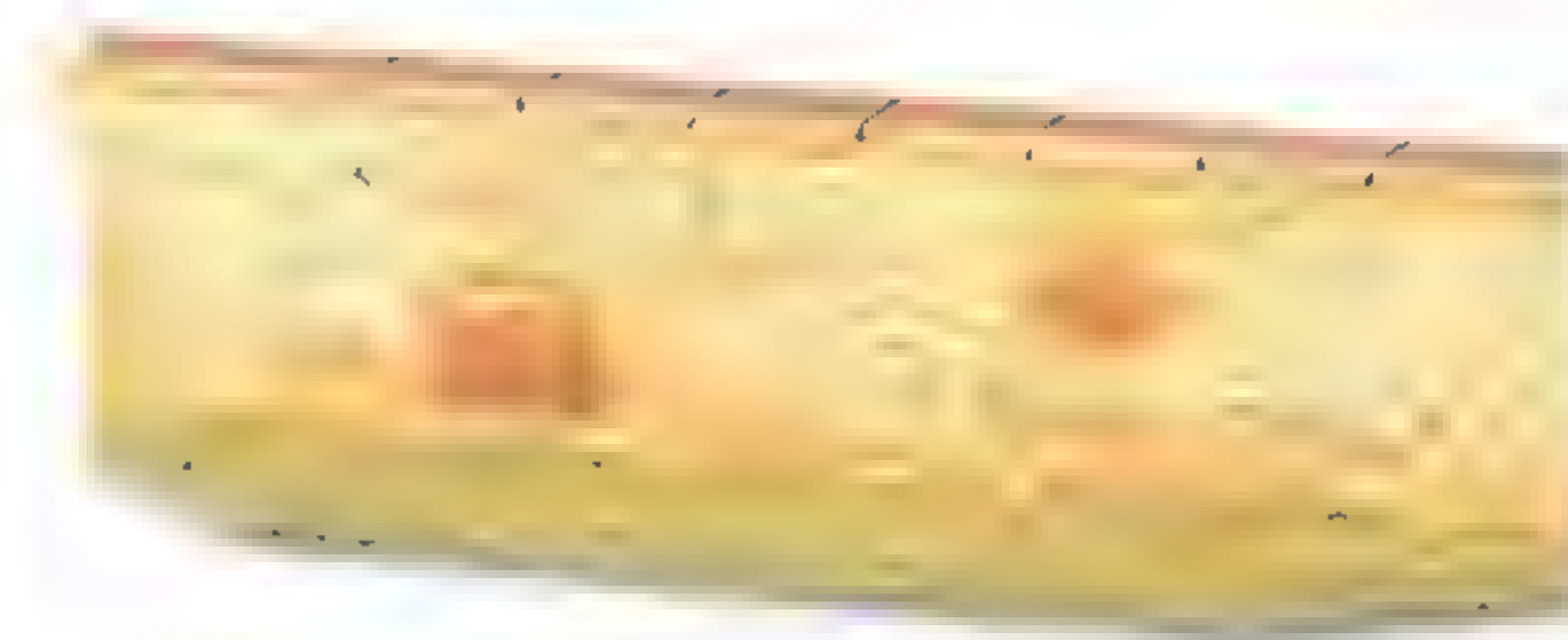
Paint the wall a suitable dark stone colour such as dark grey or even black, then drybrush with lighter shades. Finally, paint the base green and cover it with flock. Tufts of grass can be added next to the wall for extra effect.

MAKING A WALL



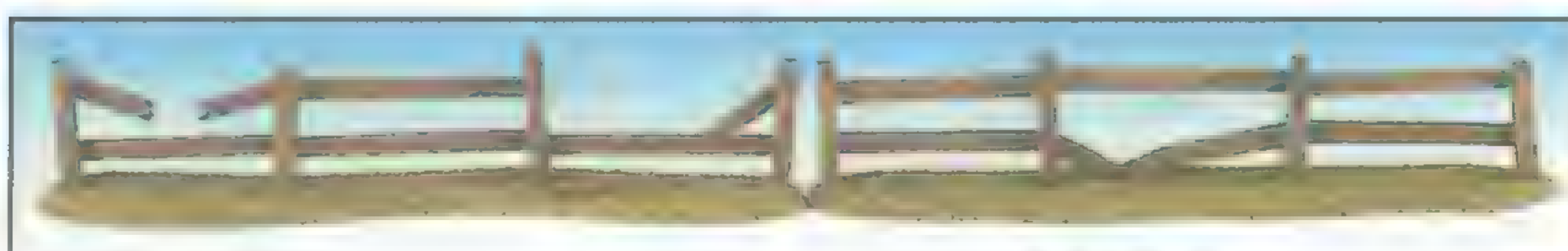
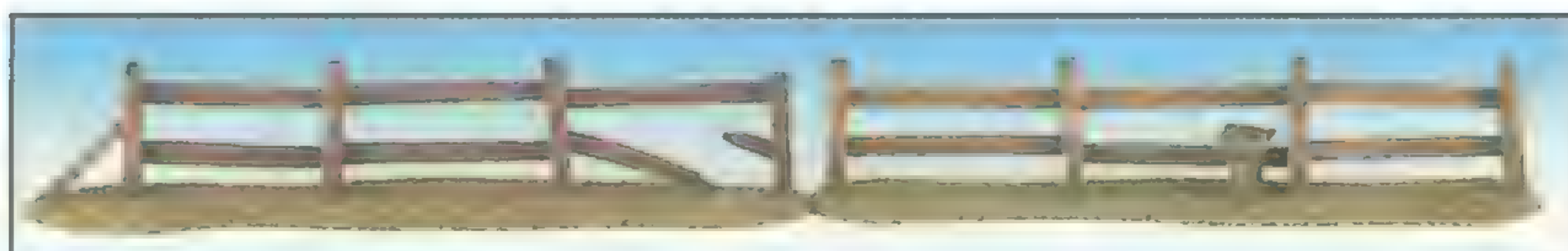
1 This wall is a brick wall covered with plaster, with a layer of tiles along the top.

The base has been made from a strip of thick cardboard glued onto a piece of cork tile. To make the surface of the wall more interesting, flattened balls of modelling clay have been glued to it to represent large stones.



2 After the wall has been textured and painted, the base is painted and flocked

An even simpler stone wall can be made by preparing the base as described already and gluing a line of small stones along it. This represents a crude and primitive boulder wall. The boulders will appear more realistic if they are painted and drybrushed to look like the same kind of rock.



Jake made these fences from nothing more than a piece of card, a few pieces of balsa wood and some flock for the base.

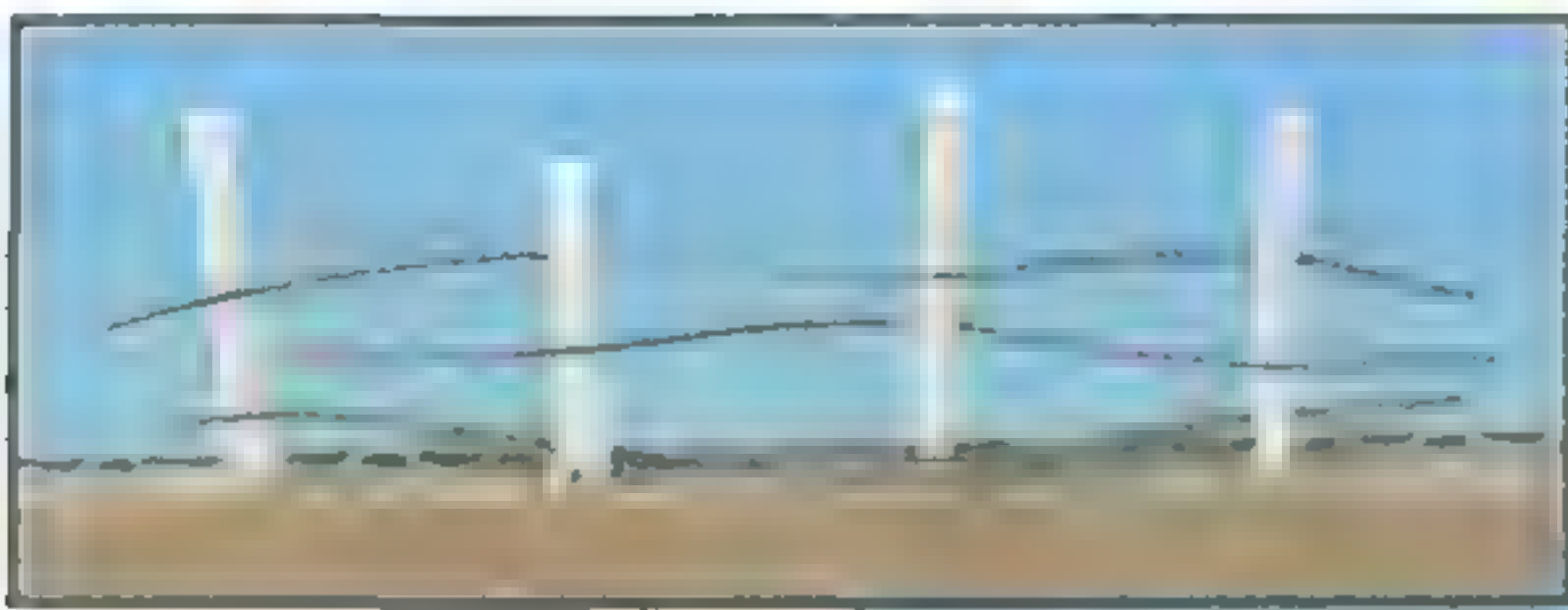
FENCES

A rustic fence can be made from cocktail sticks with the points clipped off, from thin strips of balsa wood or even small twigs.

Glue a line of five or six posts just under 3cm high along the base. Small stones made from modelling clay can be wedged next to the posts to help them stay upright and bed them

into the base more strongly. When these are dry glue long timbers across them so they look as if they have been nailed to the posts to make a fence.

Paint the fence dark brown and drybrush light brown to look like weathered wood. Finish the base as described for the stone wall.

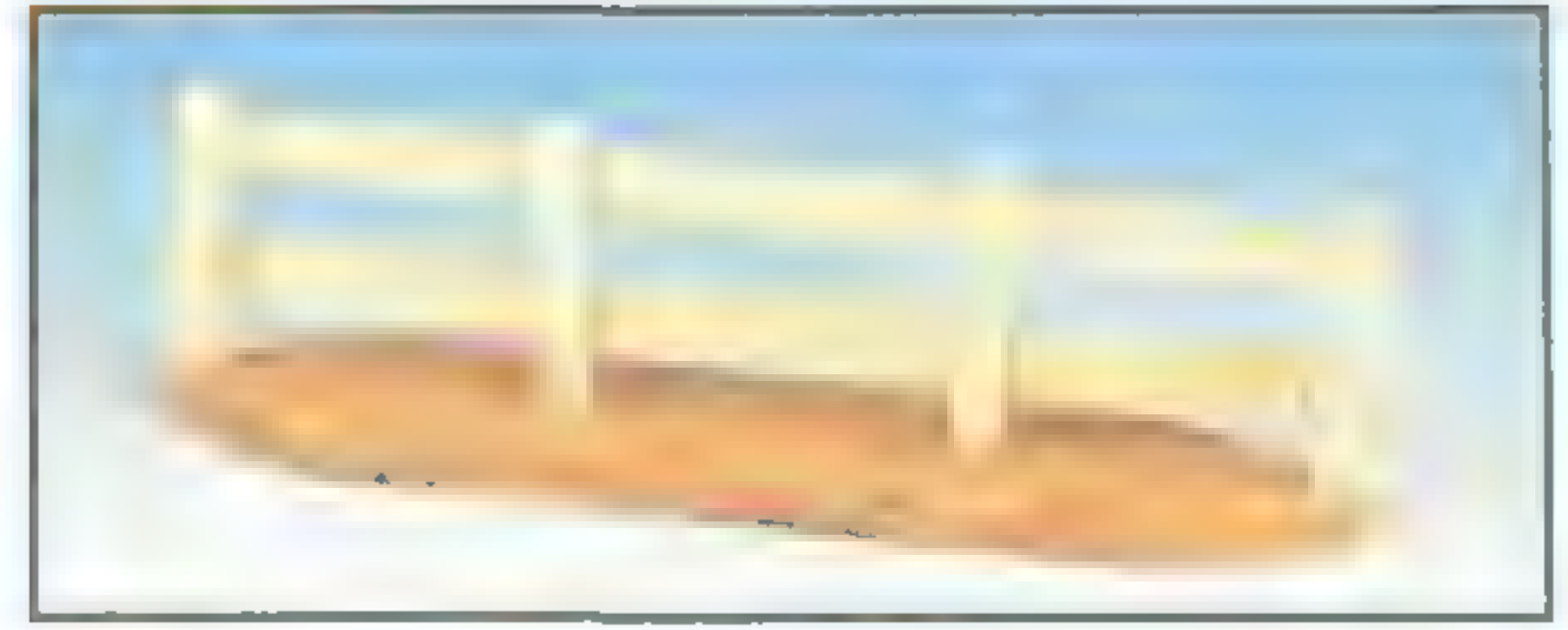


The wire and cocktail sticks were painted to look like a simple wooden fence made from branches.

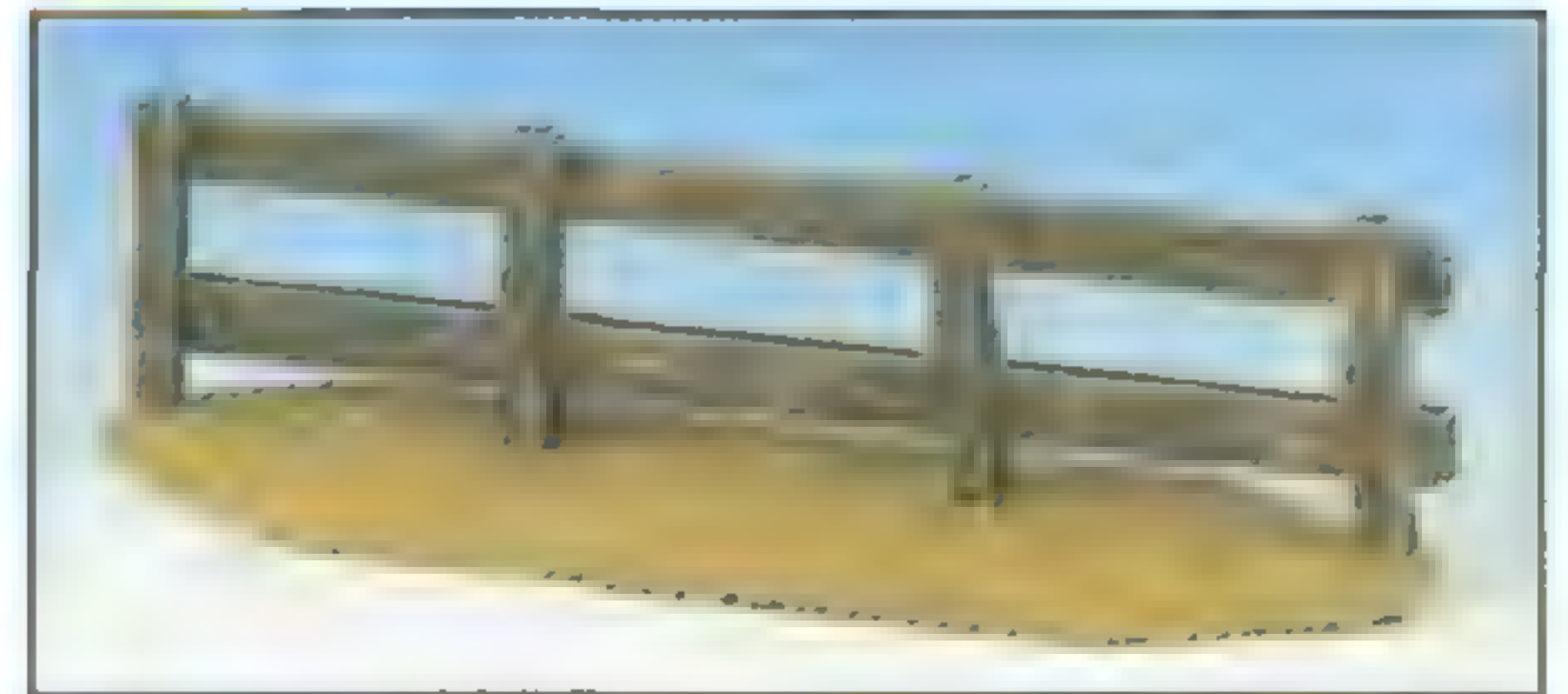
This fence was made by sticking cocktail sticks into a base, then weaving lengths of wire between them.



MAKING A FENCE



1 *The fence has been made from strips of balsa wood glued onto a piece of cork tile.*



2 *After the fence and its base have been undercoated, the wood is painted brown and the base finished in the usual manner.*

HEDGES

Realistic-looking hedges can be made simply and cheaply from green plastic pan scourers. Cut a strip of scourer the length of the hedge, and twice as high. Fold it in half lengthways, glue it together with superglue and weight it down while it dries.

When it's dry, glue the hedge onto a base made from card or cork tile. You can add some tiny stones round the base if you like. To finish the hedge, you can either cover it with glue and flock it, or drybrush it in shades of green.

The best shape for bases for fences, walls and hedges is a long rectangle with the corners clipped off at a 45° angle. If you do this, you will be able to butt them up against each other at right angles.



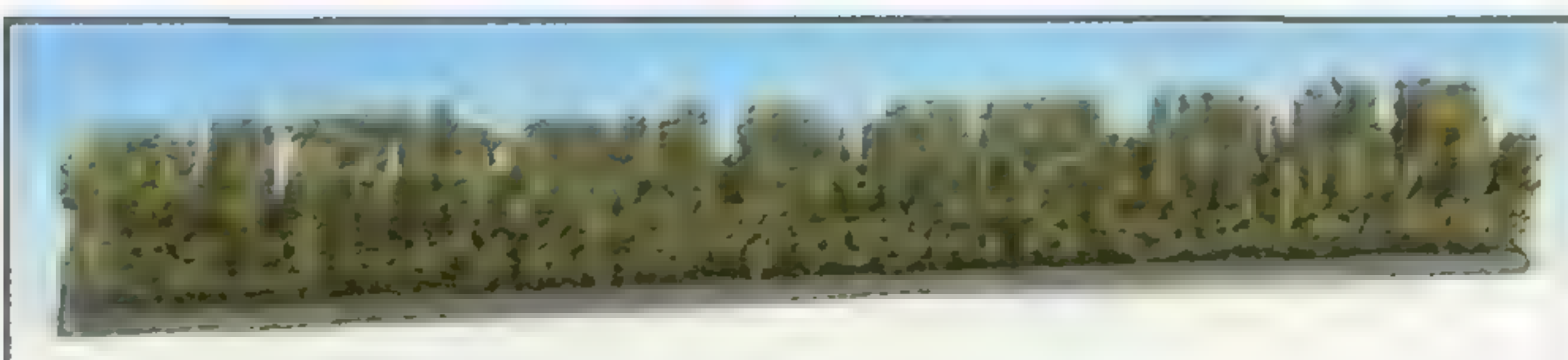
4 *A green plastic pan scourer has been folded in half, glued together, and stuck on a cork base.*



2 *The foliage of the hedge was covered with plenty of flock to make it look realistic.*



For a slightly different effect, instead of being flocked, this hedge was drybrushed in shades of green.



This ready-made hedge has been stuck onto a card base to make it more sturdy.

A green pan scourer like this is great for making hedges!

PYRAMID

Pyramids are characterful, easy-to make buildings for the fantasy battlefield. They are most common in the hot deserts of the Land of the Dead, where lost cities and half-buried tombs are home to hordes of skeletons and mummies.

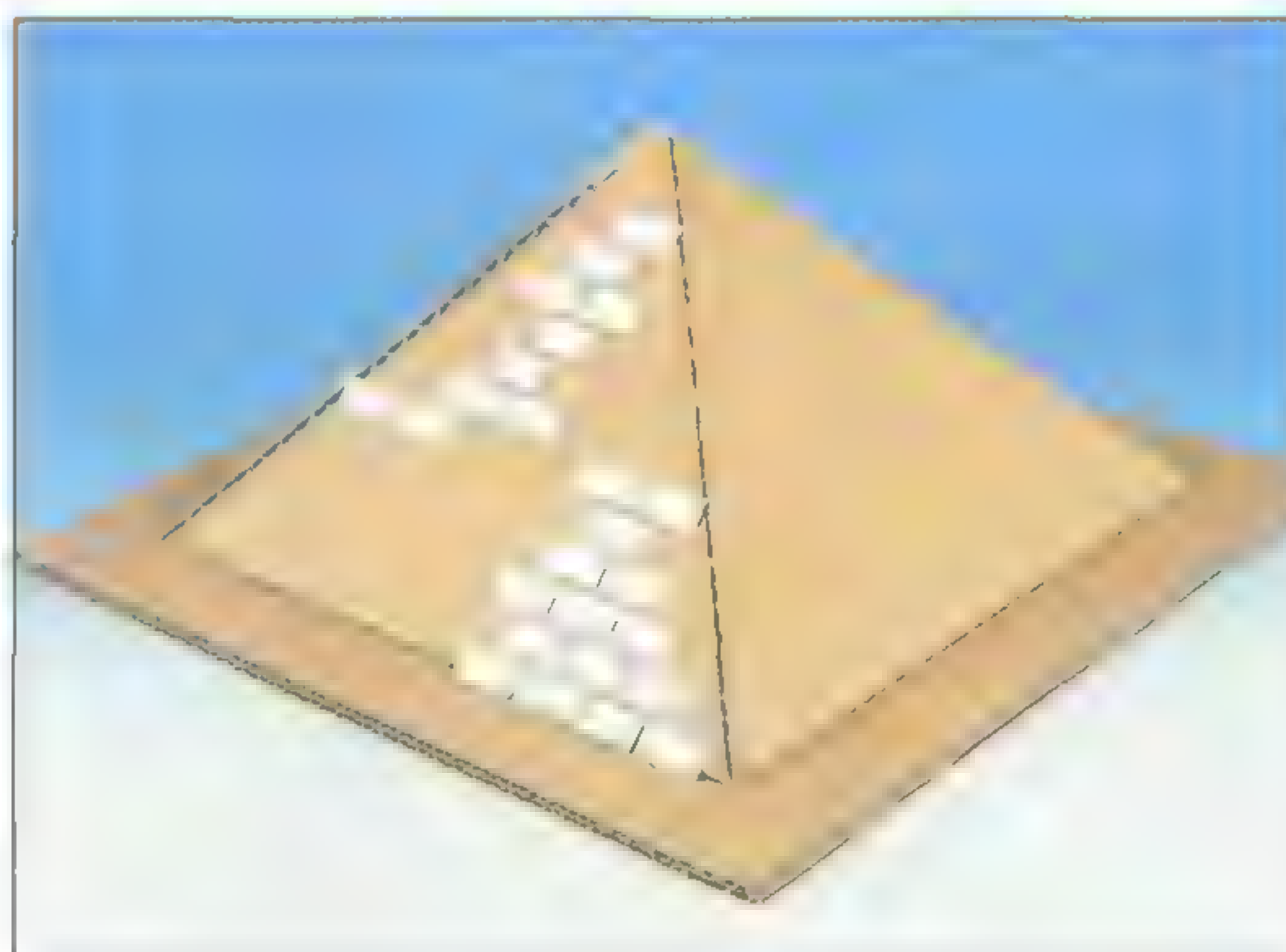
A pyramid is an easy model to make using thick cardboard.

To make the pyramid, measure and draw four triangular panels onto thick card. The triangles need to be equilateral - all three edges the same length and all corners angled at 60° . Use a protractor to help you measure the angles, or draw the triangles with the help of a compass. The panels can be any size depending on how big you want the pyramid to be and the size of the available pieces of card. The sides of our pyramid measured 20cm.

Cut out the four panels and tape them to each other along the edges. When you have joined them all together you will have a pyramidal shape.

Alternatively you can stick the panels together with PVA glue. Glue the pyramid down onto a square card base that is several centimetres larger than the bottom edge of the pyramid.

The surfaces of the pyramid can now be textured with plaster or filler smoothed over the card, painted or covered in small rectangles of thin



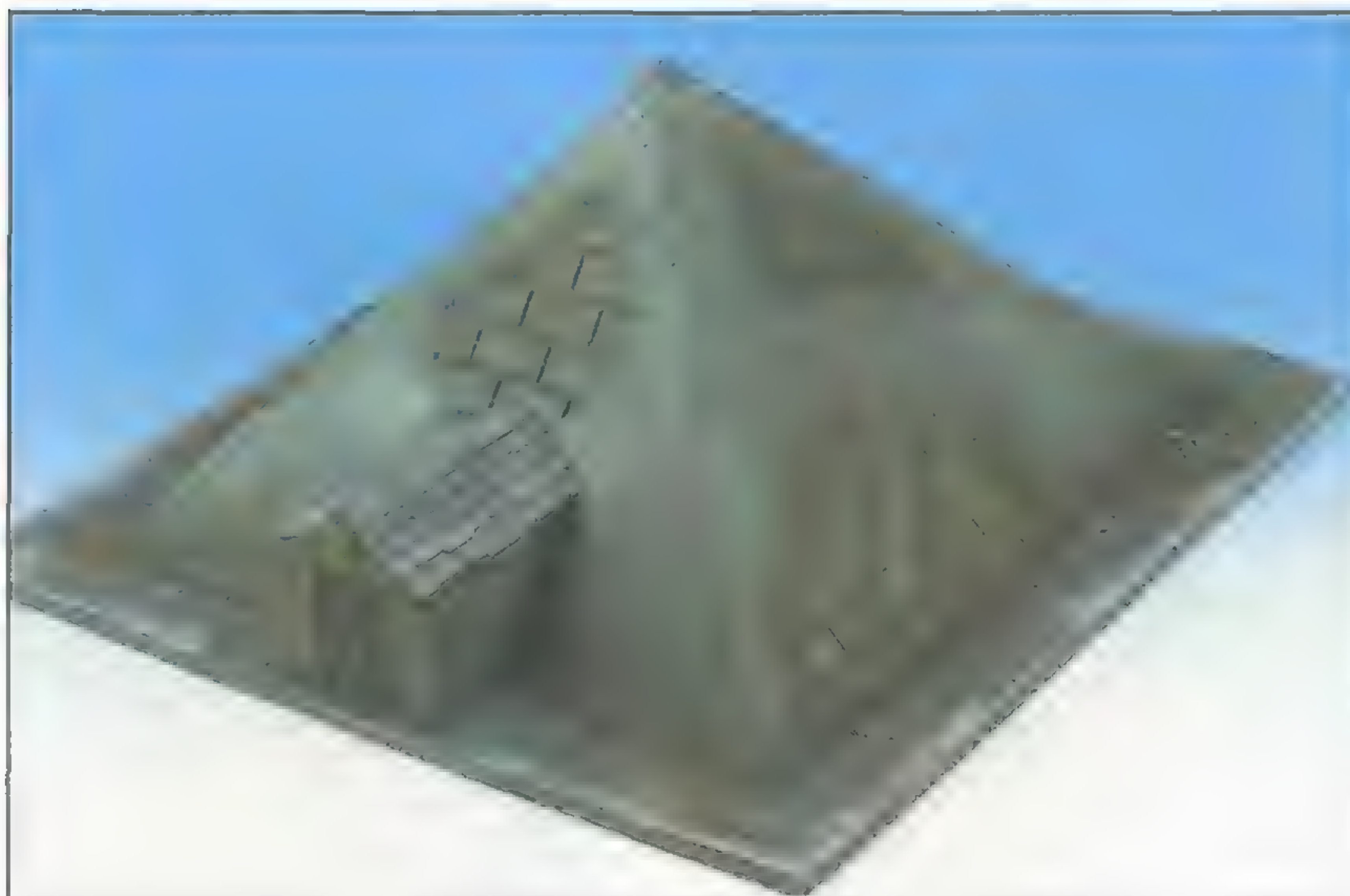
1 The four triangular panels have been stuck together with sticky tape and glued onto a card base. Rectangular pieces of card have been glued onto the sides to look like weathered blocks of stone.

To make this pyramid look really old and worn, the card tiles have been stuck on in irregular patches. If you wanted to, you could cover the whole pyramid with tiles!



2 Here, more detail is being added to the sides of the pyramid. On the right panel, textured filler has been applied to give the effect of a weathered surface.

The left panel has been treated in a slightly different way. Another triangular panel was made, and patches of tiles were cut out of it. The panel was then glued onto the pyramid over one of the existing panels. The tiles were trimmed slightly round the edges, then stuck back into their original positions to give an effect of inset blocks of stone.



card arranged in rows to look like courses of huge stone blocks.

Stick some gravel around the base of the pyramid to look like desert rubble and ruined blocks of stone. Finally the whole monument can be painted and drybrushed in suitable weathered stone colours with added detail in the form of glyphs.

To make this pyramid more interesting, Owen added an entrance chamber to the basic structure. This was made in the same way as the cottage, shaped to fit the sloping wall of the pyramid.

MODELLING MASTERCLASS – Card Buildings

Card buildings are a component of many Warhammer games and supplements. The great advantage of card buildings is that they can be assembled quickly and easily and are immediately available as terrain features for your games. They are an ideal way to start building up your terrain collection.



ASSEMBLY

The assembly instructions for each card building are provided with it, but the basic principles are broadly the same. First the card components need to be cut out. The fold lines need to be scored and folded and glue applied to the tabs to assemble the building.

The glue should be of the tacky variety that allows you to re-position the pieces if necessary, and shouldn't be too slow or too fast to dry. Bostik, Uhu and Copydex are suitable. PVA is too slow and wet for this task. Paper and card glues will do the job, but may not prove very robust. Superglue can also be used, but must be used sparingly and carefully and will make it difficult for you to re-position components if you get it wrong!

BASES

When you have a completed card building you can leave it as it is ready for immediate use or develop it further. The building actually provides you with a good basic shape for a far more robust and impressive item of scenery.

There are several very simple things you can do to dramatically upgrade the basic model. The most obvious of these is to base it on a good strong base, made as described in this book. The base

can be textured and decorated with bushes, fences and anything else that helps to make the building look as if it belongs in the landscape. A base not only looks attractive, but makes the card building stronger and more durable.

The base alone will go a long way to making a simple card building look like a very impressive terrain feature.

OVER-PAINTING

Simply painting the exposed edges of the cardboard building in a suitable colour (usually black, grey or brown) makes a lot of difference to the building's appearance. Another quick and simple touch is to paint over the coloured cardboard here and there to pick out detail, give illusion of depth, weathering or battle damage, dry-brushing, highlighting and shadow. Given this treatment the card building will begin to look very 'home-made'.

Certain features can be enhanced by sticking on bits of extra card, such as odd raised tiles, planks, stones, doors, shutters and so on. These will benefit from dry-brushing and shading to blend them into the rest of the building. The card surface of the building will now begin to lose its 'flat' appearance. You could go as far as

sticking on matchsticks and strips of balsa to enhance any timbering on the model.

RE-STRUCTURING

The ultimate step in turning a card building into a solid terrain feature would be to stick the card onto thicker card or balsa wood before assembly, or sticking card or balsa wood inside to strengthen the model. This is quite an advanced task to tackle and probably not necessary if you base the model properly.

Where this would be more useful is if you wanted to combine parts of several card buildings to make a completely new design of your own, or perhaps if you wanted to make a detachable roof so that you could put models inside.

Finally, you can use the printed panels of card that ready-made buildings consist of to create your own scratch-built buildings instead of making the original model.



STATUES

Buildings and ruins are often embellished with statues. Whether the terrain piece is a ruined temple, a mausoleum or a futuristic ruin, one or two statues will complete the effect and look impressive.

Statues can be easily made using any Citadel model. It doesn't matter if the model is old, broken or incomplete because then it can be a ruined statue. Monsters and standing figures are particularly effective as statues, but even small items from the bit box can be used as gargoyles and similar architectural features. Spare heads and skulls are especially useful.

A free standing statue will need to be mounted on a stone plinth. Gargoyles and similar carvings can be stuck directly onto pillars, roof gables and walls to look like carved stonework.

To make a statue plinth, cut a square cube of balsa wood about the right size for the base of the figure you intend to use as the statue. Alternatively you could use polystyrene, or build up a stepped plinth using layers of cork tile or cardboard.

Stick the model you've chosen for the statue onto the plinth. If the model has a plastic base already, this can form part of the plinth, so there is no need to remove it.

The statue and its plinth are now ready for painting. Before painting you may wish to add a bit of rough texture here and there using watered down filler or texture paint, especially if the statue is ruined. This will hide any breaks on the model and make them look old and weathered.

Prime the model by painting it black. This is a good base colour for painting the statue as old stone or a metallic colour. The priming will also cover any remaining paint on the old model used as the statue.

Paint the plinth to resemble stone, using lighter shades of the colour to drybrush. A statue plinth will often be made from valuable or highly polished stone, so there is plenty of scope for exotic effects. The plinth may be further decorated with an inscription, runes or gargoyles carved onto it.

The statue itself can be finished off in the same way as the plinth and may even be carved from the same block as the plinth. The statue is even more likely to be an exotic stone such as red or black granite, white marble or veined green or purple porphyry!

Instead of a stone statue, you can opt for a metallic statue. Decide whether you want it to be bronze, gold, iron or whatever bizarre metal you wish. Then paint the statue in

the same way as you would the equivalent metal armour on a normal model, using glazes and washes to shade the deep recesses. Since the statue may be old, ruined and exposed to the weather, the metal can be corroded and patinated. These effects can be obtained using green glazes and washes, or drybrushing with suitable green or rust colours.

These techniques will work equally well for other stone or metal carvings such as gargoyles, and bits of broken statuary included among the rubble.

A statue on its own plinth can be stuck onto a larger terrain feature such as a ruin, or used separately as a small terrain piece in its own right. The statue can then be placed on or beside any appropriate building.



This statue was made from three separate models glued on top of each other!



The sides of this statue base were decorated with a design cut from card. The shields are plastic shields from Citadel Miniatures.

WARHAMMER 40,000 SCENERY

The grim battles of the 41st millennium are fought over the weird landscapes of countless worlds. On a battlefield swept by awesome firepower, every commander has an eye for the terrain. Would you deny your brave troops that vital cover? There is only one way to turn your table-top battlefield into a setting for these fateful struggles and that is make the scenery yourself!

ROCKS. . . . .	.58
CRAGS. . . . .	.59
JUNGLE. . . . .	.60
CRATERS. . . . .	.63
SPACE SHELTERS. . . . .	.64
ORK BUILDINGS. . . . .	.65
BUNKERS. . . . .	.66
RUINED BUILDINGS. . . . .	.68
INDUSTRIAL SITE. . . . .	.70
STEPPED PYRAMID. . . . .	.72

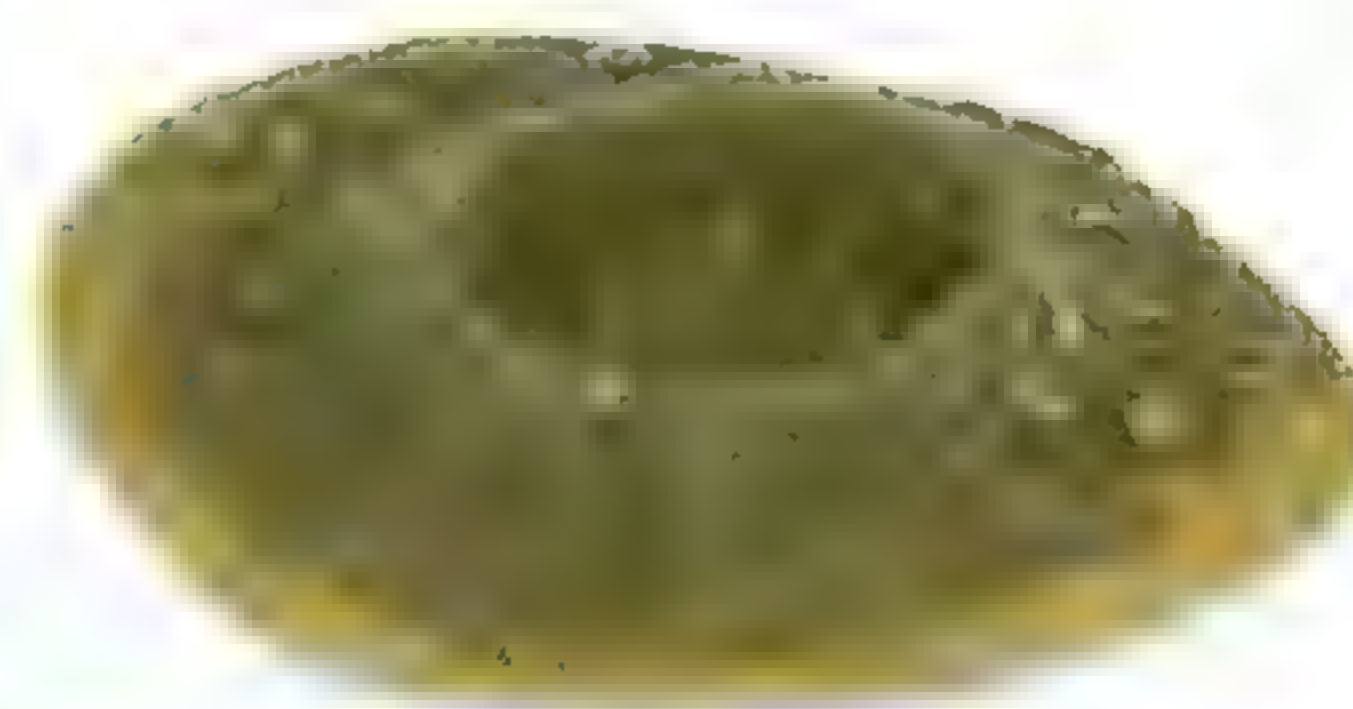
Rocks



Jungle Tree



Crater



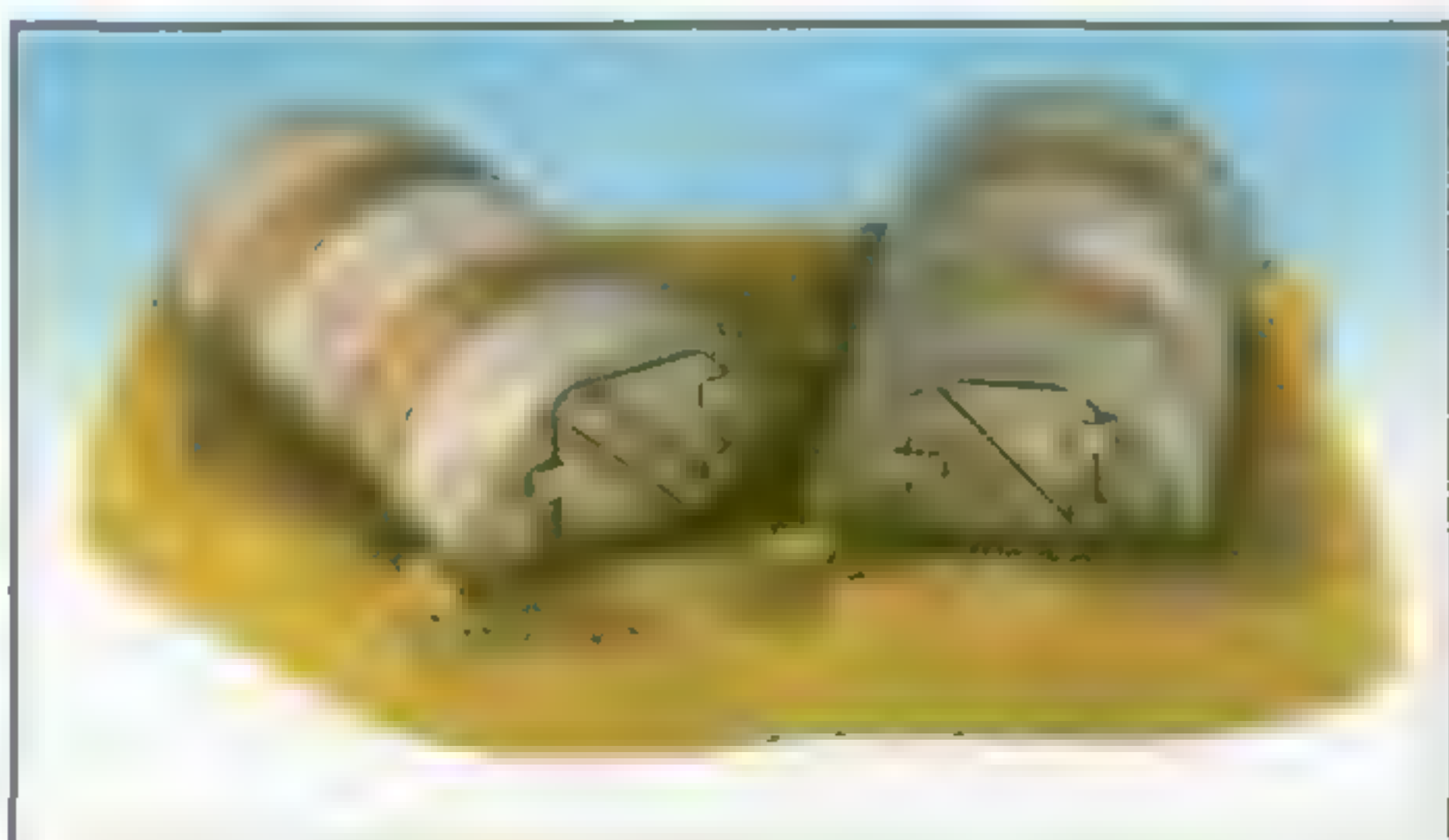
Bunker



Ork Building



Space Shelters



Pyramid



Industrial Site



ROCKS

A desolate and barren wilderness, whether it is the surface of another planet or the parched and arid landscape of the future, is always likely to be strewn with rocks and boulders. These are at the same time an obstacle to movement and provide concealment and protection from all kinds of weapons.

Rocks and boulders are perhaps the easiest terrain features to make. Suitable stones and pebbles can be found on the beach, walking in the countryside, picked up in the garden or bought from pet shops where they are sold for putting in aquariums!

Irregularly shaped stones with rough surfaces (for instance quartz and granite chips) look most realistic. You may even be able to use some stones without having to paint them or stick them on bases. Strangely shaped or coloured stones are particularly impressive. Less interesting rocks and pebbles can also be used and improved to become terrain features.

Several stones mounted on a small base together become a cluster of boulders, and if long finger-like rocks are used these can become upright monoliths or stalactites.

MAKING A ROCK PILE



The rocks have been glued onto the base, the sides of which have been tidied with filler. A litter of tiny stones has been glued round the base of the rocks.



After painting, the base was covered with flock, and the stones were given a final drybrush.

Stick your stones to the base with PVA glue and scatter smaller stones, gravel or sand around the bottom of the stones on the surplus PVA glue. This will not only add to the effect but help to hold the bigger rocks on more securely.

Finally the rocks can be painted either to resemble weathered boulders or perhaps in some weird alien colour scheme to represent a strange outcrop of crystal. You can let your imagination run riot at this stage!

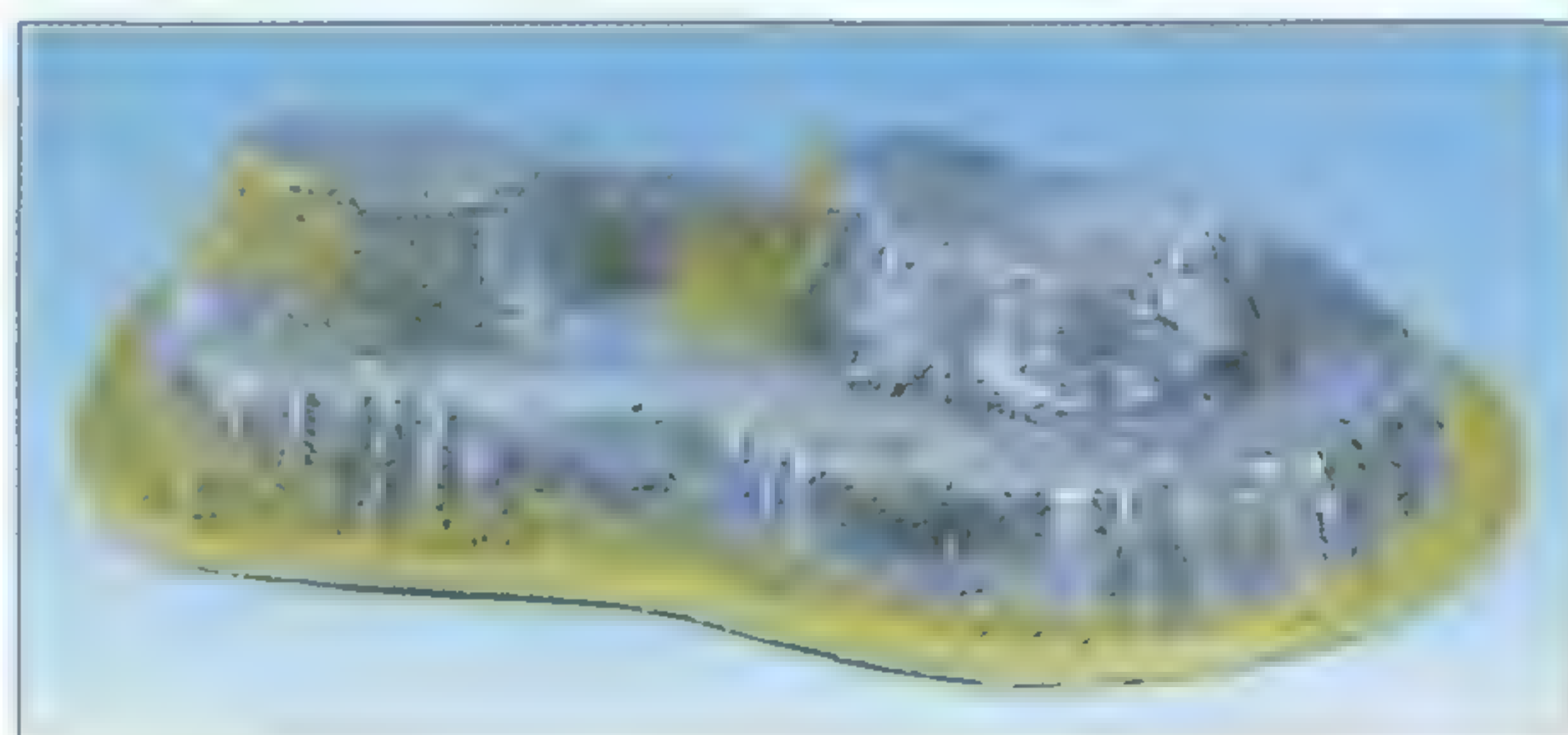
Rough surfaced rocks and those with very rugged and irregular shapes will drybrush particularly well and look most realistic. Smooth round pebbles are perhaps the least convincing.

The base around the rocks can be painted or textured with sand or flock. Groups of rocks look particularly effective when combined with tropical plants or giant cacti. You can actually stick flock onto part of the rocks using PVA to represent moss or lichen.

Making a Quick Slag Heap

Robin Dews made this slag heap quickly and simply from three pieces of thick polystyrene glued onto a base of thick card. The hills were roughly modelled with a craft knife to look rocky, then were covered with textured paint. When this was dry, the hills were sprayed with black paint, then drybrushed in shades of blue and grey. The patches of greenery were made by gluing patches of green flock here and there. Using this quick technique, Robin has made enough slag heaps to cover an entire wargames table, creating a unique battlefield for his Warhammer 40,000 battles.

Robin deliberately designed the slag heaps so models could be placed all over them.



For more ideas about making model rocks, stones and boulders, see pages 39 & 40 Warhammer Scenery section.

CRAGS

Craggs are high hills with steep rocky slopes and jutting outcrops of bare rock. They also contain flat areas and hollows where troops can hide or shoot from a high vantage point. Craggs are likely to be found wherever harsh natural forces, such as volcanos, earthquakes, desert winds, glaciers or raging torrents have sculpted the landscape.



Making a crag is very similar to making a steep hill as described earlier in this book. Build up the hill to the required height in layers with a stepped effect if you wish to be able to stand models at various levels. For a really craggy hill, make the slopes as steep as you can. A particularly interesting craggy hill might have steep slopes on one side and a series of stepped slopes on the other.

Polystyrene is a good material for making rugged craggy hills because it can be easily carved and shaped to look like a bare rock face. A file can be used to make grooves and crevices in the rock face which will look very effective when the feature is painted and drybrushed. These also provide places to stick plants when the model is finished.

Small chunks of polystyrene can be glued onto the top of the hill with PVA as pinnacles or rocky outcrops. As an alternative to polystyrene you can simply glue rocks on to a layered cardboard or cork tile hill.

When you have created the basic form of your crag, it should be painted with PVA and scattered with sand, or painted with textured paint to give it a really rough texture like weathered rock. When scattering sand on glue, it's a good idea to mix in a few slightly larger

stones, or some grit or gravel to give a varied and interesting texture. You can build up several layers to make the crag look more rugged. The same technique applied to a gently sloping hill could be painted in sand colours to create a sand dune.

When the crag is suitably textured, decide whether you want any areas of it to be covered in grass and paint these bits green. The gentler slopes look better treated in this way, with the rugged areas protruding as bare rock.

Paint the remaining parts of the feature to resemble weathered rock. This will require a fair bit of drybrushing. Paint PVA glue over the green areas and add green flock. If these areas have the same rough texture as the bare rock areas, then all you may need to do is drybrush in a lighter shade of green.

The crag is now ready for use, but it will look much better if embellished with the odd bush or weird tropical plant or cactus clinging to the rocks or rooted in the crevices. These do not need to be very big to look effective.

Tufts of grass made from frayed rope painted green will also look good protruding from cracks in the rock.

MAKING CRAGS

This craggy outcrop was made from moulded chunks of polystyrene stuck together with PVA. Filler was then spread into the cracks. The rocks



were painted with watered down filler to seal the polystyrene, then painted and drybrushed in shades of grey.



JUNGLE

Jungle trees and plants are easier to make than the oaks and pines of a temperate landscape. Strange planets with strange climates will have forests of weird and wonderful plants. You can really let your imagination run wild inventing bizarre vegetation for steamy tropical jungles or arid deserts!



The most impressive and easiest plants to make are the ones that have a few gigantic broad leaves emerging straight from the ground or from a short stubby trunk. The leaves can be cut from paper in whatever weird and wonderful shapes you like. By folding the paper you can cut through several layers with scissors to make multiple leaves of identical shape.

TROPICAL TREES

To make a tropical tree similar to a palm tree take several lengths of wire about 15cm long and twist them together. Leave about 2.5cm of wire untwisted at one end to become the roots and about 5cm untwisted at the other end to become the ribs of the broad leaves.

Spread out the 'root' wires so that the tree can be stood upright resting on the outspread wires. Glue the root wires and stick the tree onto a small round base of stiff card.

When the tree is securely stuck on its base, spread out the 'leaf' wires and bend them so that the leaves curve over in a realistic manner.

For the leaves, cut out as many narrow ovals of paper about 5cm



Crags and jungle trees provide a characterful battlefield for these Chaos Space Marines.

MAKING A WIRE TREE



1 Making the tree skeleton by twisting wire and spreading out the top and the bottom to make branches and roots.



2 Preparing the bandage by dipping it in a mixture of filler and water. Use a lot of water and not too much filler.



3 The bandage is wrapped round the twisted wire to make a trunk for the tree.

The leaves are made from ovals of paper painted green, with slits cut along the leaf edge.



This finished tree has been made to resemble a palm tree.

long as there are leaf wires. You can cut slits into the edges of the leaves for extra effect, or leave them plain. Stick one leaf onto each wire so that the wire runs along the middle of the leaf as a central rib. The paper leaf will follow the curve of the wire and droop realistically as if it were a big heavy leaf.

When the leaves are secure, it is time to texture the trunk. You could just paint the tree at this stage giving a twisted effect to its trunk, or you can wind bandage, wire, tape or string around the trunk to

create a different texture.

To use bandage, you will need some narrow lint bandage. Soak the strip of bandage in a mixture of filler and water. The mixture needs to be fairly watery. When the bandage is soaked, wrap it round the wire trunk and leave it to dry.

You can apply modelling clay to the root wires on the base and shape it into realistic gnarled roots, or just cover them up to look like firm ground around the trunk. At the top of the trunk it's a good idea to use tape or wire to tidy up where the leaves emerge.

The tree is now ready to paint. Finish off the base by painting it green and adding flock. The trunk can be painted and drybrushed in either brown or green. The leaves will look good if painted a deep lush green and drybrushed with a lighter and more vivid shade. You might even like to make variegated patterns with different shades of green for added effect.

Several trees of different heights stuck onto a single base, perhaps with tufts of grass and boulders added, will make a good jungle terrain piece.

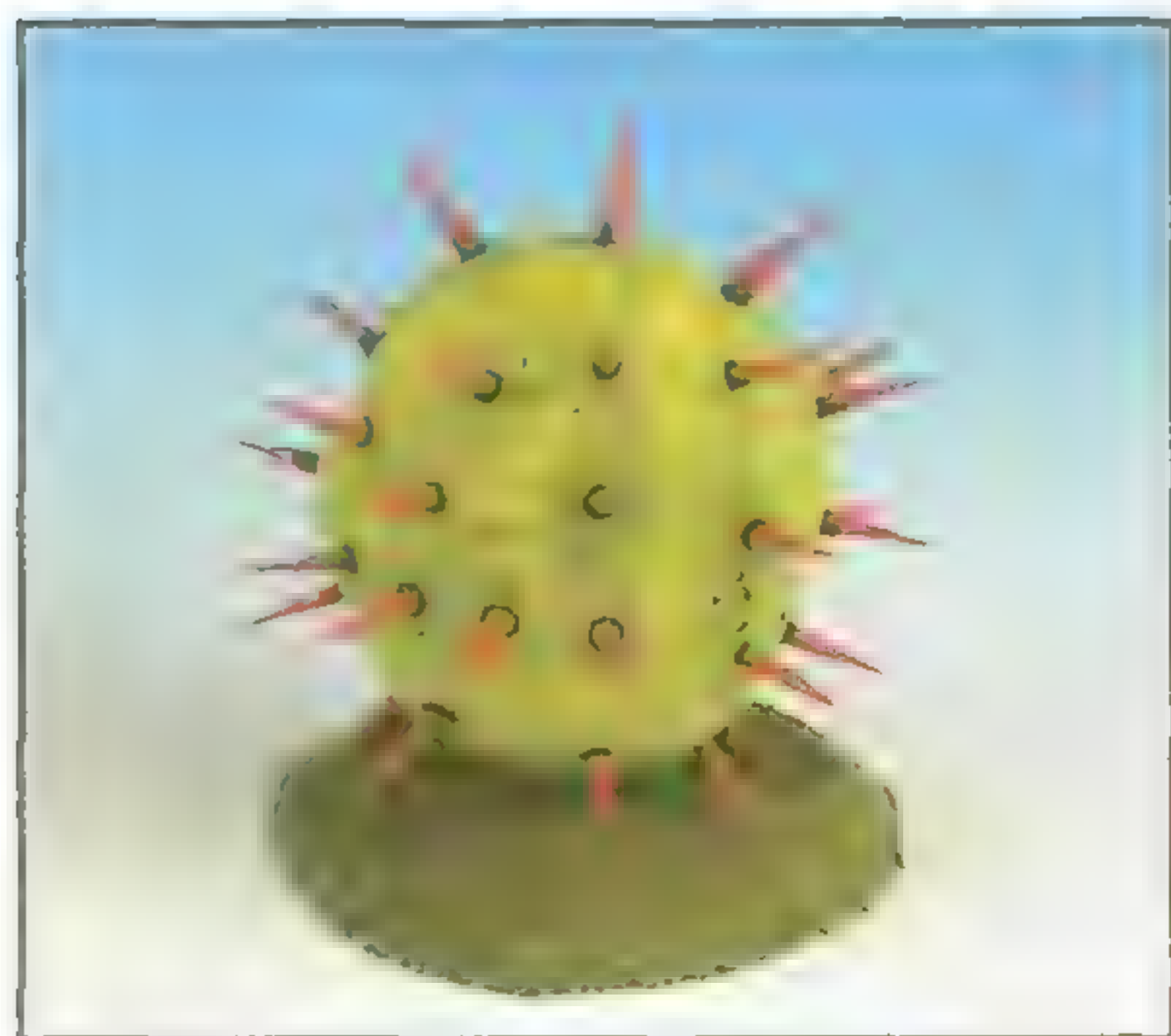
JUNGLE PLANTS

You can make a jungle plant using the same method as already described for making tropical trees. Just use shorter lengths of wire and make the trunk very short so that the plant appears to be growing close to the ground. Vary the size and shape of the leaves to create different types of plant.

GIANT CACTI

Giant cacti are a completely different type of plant from those already described. Cacti are tough, spiky plants which grow in arid regions. In shape they can be almost spherical, or flat, or tall.

To make a cactus use modelling clay or a piece of polystyrene and shape it into the form of a cactus.



This giant cactus was made from a ball of polystyrene studded with cocktail sticks.

Score any ridges or other markings that you wish onto the cactus body.

If you want a cactus that branches out into several segments, build it up on a wire armature by twisting together stands of wire as described for making tropical trees. Separate out wires to form the branches of the cactus. If using polystyrene, push shaped pieces of this onto the wire. It is best to mount the armature onto a base before modelling the cactus.

When the cactus shape is ready, you can add spines made from cocktail sticks. Cut them to the length you want and push the blunt ends into the cactus body to create spines. When you've finished, secure the spines with glue. Not all cacti need spines, some will look good enough without them.



Rather than leaves made from card or paper, bristles from an old brush were used to make the spiky foliage of these trees.

The cactus is now ready for painting. A dark green drybrushed with lighter shades looks effective, with the spines picked out in red.



CRATERS

Craters make interesting terrain features in which models can hide. Several craters of various sizes can be arranged together in a group to create an area of rugged ground.



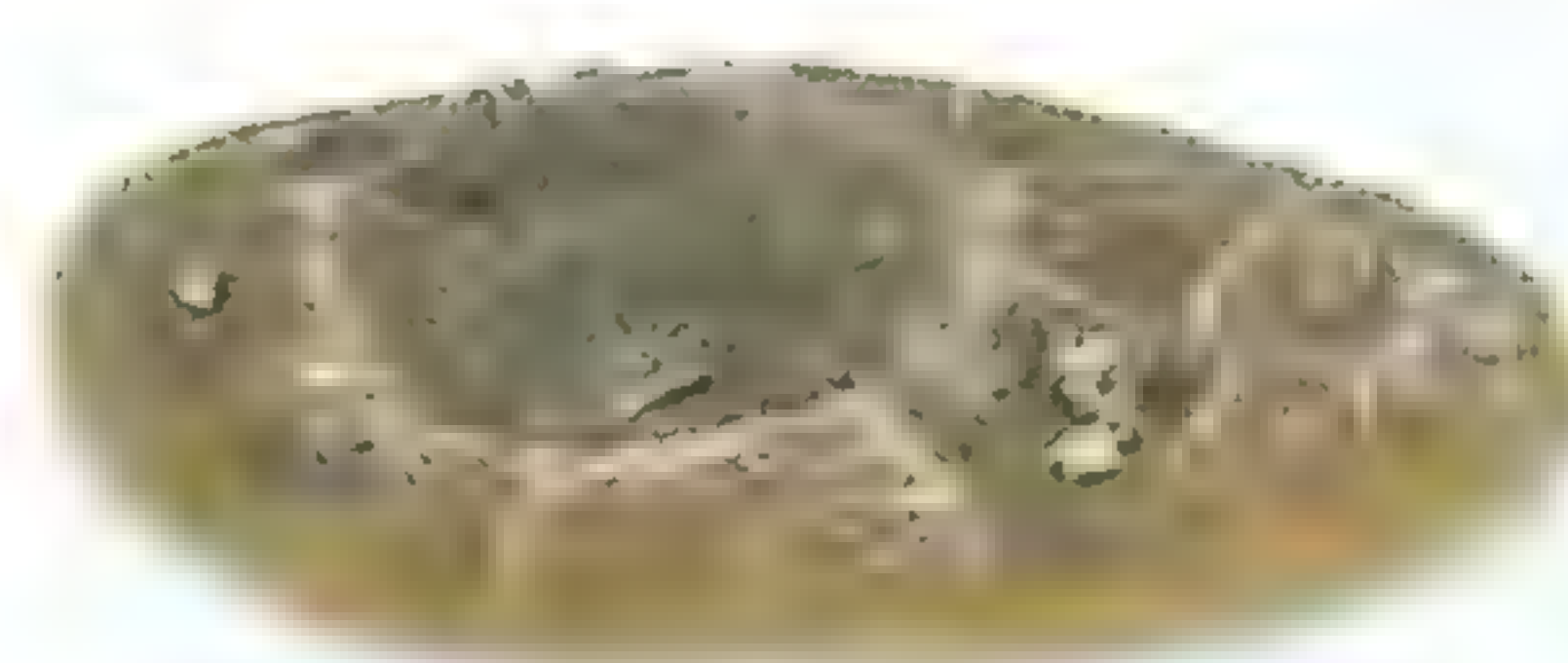
To make a crater, first cut out a round base from thick cardboard. If the crater is small you may be able to use fairly thin card for the base.

To make the edge of the crater, use modelling clay, filler or PVA glue mixed with sand. Whatever you use it should have a stiff consistency so you can build it up in a ring around the edge of the base to create the crater. Using a spatula apply the paste to the edge of the crater base. Shape it so that it looks like the rubble, earth and debris surrounding the hollow part of the crater. Odd rocks, grit and small stones can be added to the crater edges for extra effect.

Alternatively, you can build up the circular walls of the crater with card or polystyrene, then cover them with filler as outlined above.

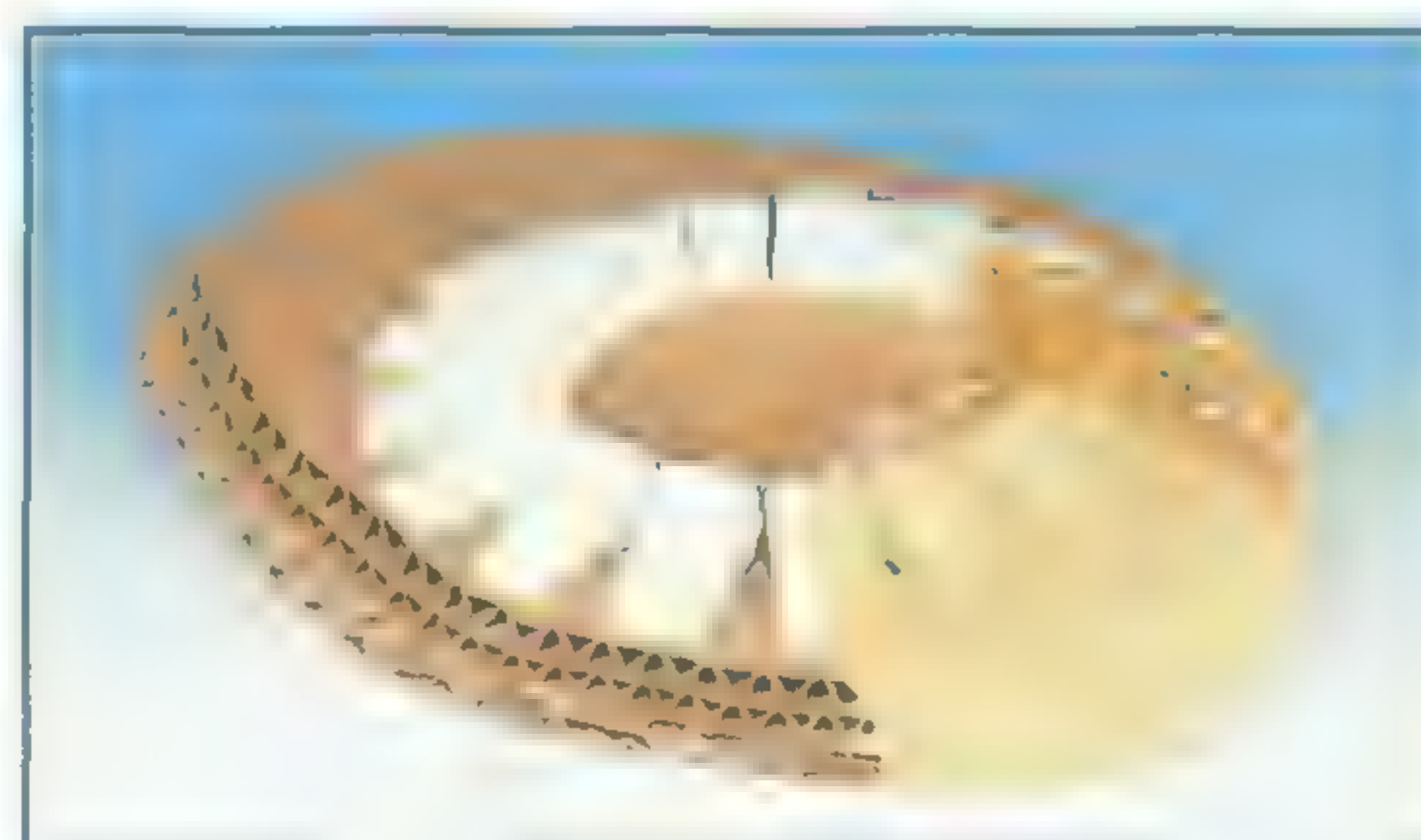
When the crater edge is finished, spread a small amount of the paste in the interior of the crater to give texture to the crater floor.

Make the interior hollow large enough to place at least one model inside it. When the crater is dry, paint it suitable 'scorched earth' colours. It will benefit from good drybrushing, especially if the crater has a rough texture.



For variety, combine two or three craters to create a pock-marked surface.

MAKING A CRATER



The crater base has been made from three sheets of card, to give it extra strength. A circle of polystyrene wedges has been glued onto the base, which are being covered with a mixture of sand, PVA and coarse sand.



The finished crater has been flocked round the edge of the base. The sides of the crater have been painted and drybrushed in shades of dark grey to look like volcanic rock.



Different sorts of terrain features can be combined, such as a crater and a ruined building.

SPACE SHELTERS

Some of the simplest buildings to make are space shelters made from thick cardboard tubes. As each shelter consists of half a tube, it's worthwhile making two at the same time. You can either put them on the same base, or base them separately.



To make your space shelters, you'll need a thick cardboard tube. A toilet roll will do, though the crisp tubes are best. Cut the tube in half lengthwise into two equal sized half tubes.



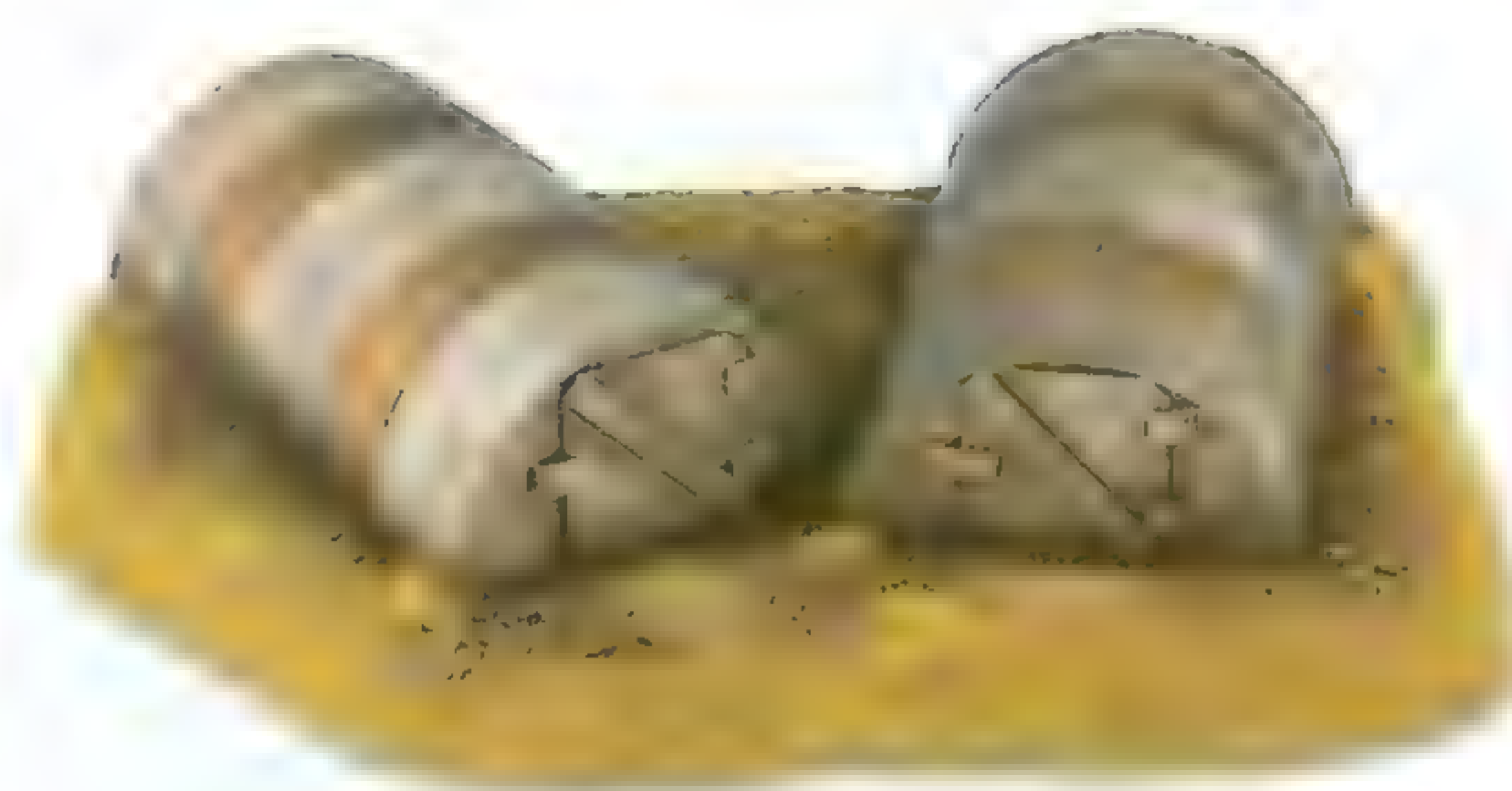
The base has been made from several sheets of corrugated cardboard, to give it strength and thickness. The tubes have been detailed with strips of thin card to represent metal panels.

Stick these down onto a strong card base with the curved side upwards. They can be stuck side by side but will look good stuck at right angles. Cut out four half-circular pieces of card to stick at the ends of the half tubes. Draw round the half tubes to get the shape to fit.

Now the space shelter is virtually complete. It can be embellished by adding card hatches and doors or these can simply be painted

on. Paint and texture the base around the structures with sand or flock.

Small rocks and boulders can be added here and there. The curved buildings can be painted in various ways to resemble concrete, metal or in camouflaged patterns.



MODELLING TIP – Using Card for Detail Work

One of the many uses for card is detailing flat surfaces. You will need good quality card for this. Cereal packet card will do, though ideally something a bit thicker would be better. To detail flat surfaces such as building walls, the sides of statues, futuristic machines etc, stick a pattern of card shapes to them. You can even build up the card detailing in layers to give it depth and make it more interesting. You'll notice that this technique has been used on many of the models in this book, including the industrial buildings on page 70.



The surface of the model has been built up with card and some strips of wire.



The surface has been drybrushed to accentuate the raised detail.

ORK BUILDINGS

The Orks who inhabit the Warhammer 40,000 universe live in adobe buildings which are made out of mud bricks dried in the sun. This kind of building is easily constructed anywhere - all you need is mud!

The walls of Ork buildings are made quite thick and the buildings are surprisingly long-lasting. As the walls crumble with age or through battle damage they can easily be repaired with more mud. Rooms, doors, towers or walls can be added to the buildings at any time, creating rambling, complex strongholds.

The basic shape for an Ork building is a rectangular box with a flat roof. An Ork hovel can be made by first cutting out a roughly square base from thick card, about 10cm square. Then cut out a strip 5cm wide and 30cm long from a sheet of thin card. Score three lines across this strip at 7.5cm intervals. At this point cut out a doorway and any small window slits that you want the building to have. Bend the card along these lines to create a box shape 7.5cm square. Join the ends at the corner using tape or a tab of card stuck to the inside.

The box can now be glued to its base. The building is finished by adding a flat roof of card cut to fit the top of the box. Since Ork buildings have very thick walls the model will look better if the walls

are cut from thick card or cork tile, but extra layers of thin card can be added to build up thickness and strengthen the structure.

Finally, before painting, the building will benefit from being given a rough texture. This can be done by painting it with PVA and scattering sand

on it, or better still, by spreading filler over the card with a spatula. The layer of filler should be thin, but not too wet or the card may warp. When they are dry, the textured walls can be painted with dilute PVA to seal the filler or just painted with an undercoat before the final painting.

The door can be made from thin card and painted to look like wooden planks or a rusty sheet of steel. The flat roof may have a



similar hatch enabling the Orks to get onto the roof. You can further embellish the building by adding a 'parapet' around the roof using strips of thick card, cork tile or balsa wood.

The base around the building can be textured and flocked or painted to look like well trodden ground. The building is painted shades of yellowish brown, sand colour or yellowish-white and drybrushed with lighter colours.

MAKING AN ORK BUILDING



Left: The basic shape of the building has been made from thick brown cardboard. Holes for the door and the windows have been cut in the walls. Texture is being added to the walls and the roof.

Right: The finished building has been painted off-white and decorated with colourful Ork glyphs. The simple, barred window was made by sticking wire across the back of the window aperture.



BUNKERS

A bunker is basically a concrete blockhouse with thick walls to withstand shell blasts and protect the troops inside. The walls are pierced by narrow gun slits out of which the troops inside the bunker can shoot. They usually have a thick roof and can have sloping walls to deflect shots.

The shape of a bunker may vary from a simple rectangle to all manner of geometric shapes to allow a wide field of fire from its gun slits. Bunkers are often partly set into the ground for added strength and concealment and may have barbed wire or other obstacles around them.

The easiest bunker to make is a simple rectangular blockhouse with straight sides. First make a sturdy cardboard base for the bunker. Then cut out a rectangle 15 x 5cm from a sheet of thin card. Draw two lines 5cm apart to create three 5cm square panels and score along the lines so that the card can be folded. If you have thicker card you can make three panels 5cm square instead. Cut narrow gun slits in the centre of each panel. These should be the right height for a model to poke his gun out of.

Now fold the 15cm rectangle so that you have an open box shape and glue it to the base. If you are using separate panels glue them down to form three sides of a square bunker.

At this stage you can make the bunker thicker and stronger with recessed gun slits. Cut out another set of three panels as described above, and cut bigger gun slits in them. Stick the panels on top of the bunker walls. The bigger gun slits on the new panels should be slightly larger than the original slits so they act like a frame. The gun slits will now appear to be recessed slightly and the walls will be thicker. You can continue adding panels in this way to make the bunker look as thick and strong as you wish.

Build up a slope against the outside walls of the bunker with cardboard, polystyrene or filler. Do not go up so far as to cover the gun slits. When the built up ground is dry cover it in PVA and sand to give it a rough, earth texture. You can also give the outside walls of the bunker the same treatment to make them look like weathered and battle worn concrete.

If you want to put troops in the bunker, you can leave the back open, or add a back wall and have

a removable roof. If you want an enclosed model, stick another wall panel to the open rear to seal it off. Cut a rectangle from thin card and stick this on the rear panel to make a steel door.

The bunker only needs a roof to be complete. The roof is made from a square of card slightly larger than the dimensions of the bunker so that it sits on top of the walls. If you want to put models inside the bunker, do not glue the roof on to the walls, but paint the roof separately and paint the interior of the bunker. Otherwise stick the roof onto the walls.

The base of the bunker and the ground around it can now be painted and flocked either green or earth colour as you wish. Then paint the bunker either to look like weathered concrete or perhaps camouflaged to blend into the ground. You may want to detail blast marks or scorch marks by drybrushing with black at this stage. Paint the barbed wire prongs and steel door to look like rusty metal.

MAKING A BUNKER



The walls of the bunker have been constructed and glued to the base.



Rear of the finished bunker.



Front of the finished bunker. Note how the gun slits have been recessed.

MODELLING MASTERCLASS – Using Wire Mesh

Wire mesh is one of the most versatile types of modelling material for Warhammer 40,000 scenery. It's available from car maintenance shops and is relatively cheap. With it you can make all sorts of interesting pieces for your games such as fences and razor wire. Wire mesh can also be used for adding an industrial or military look to models.



FENCES

Fences are perhaps the most obvious use for wire mesh. If you make several sections of fence you can arrange them in different ways each time you play, allowing you more variation in your games. Buildings can be surrounded with fences to create defensive outposts.

A little variation in the sections can make all the difference - some fences can have holes blasted in them, some can have gates that the enemy can storm, others could have razor wire running across the top.

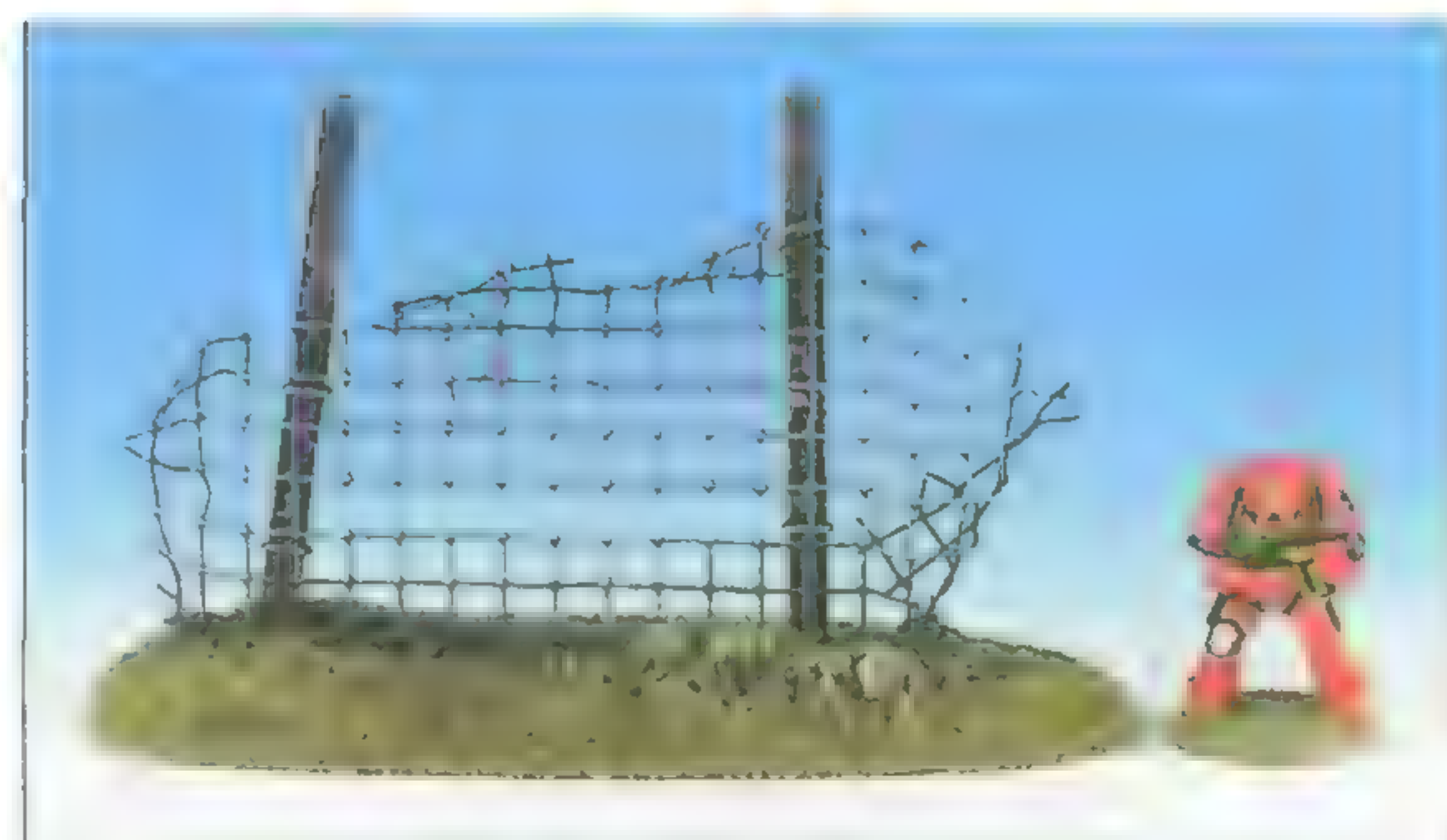
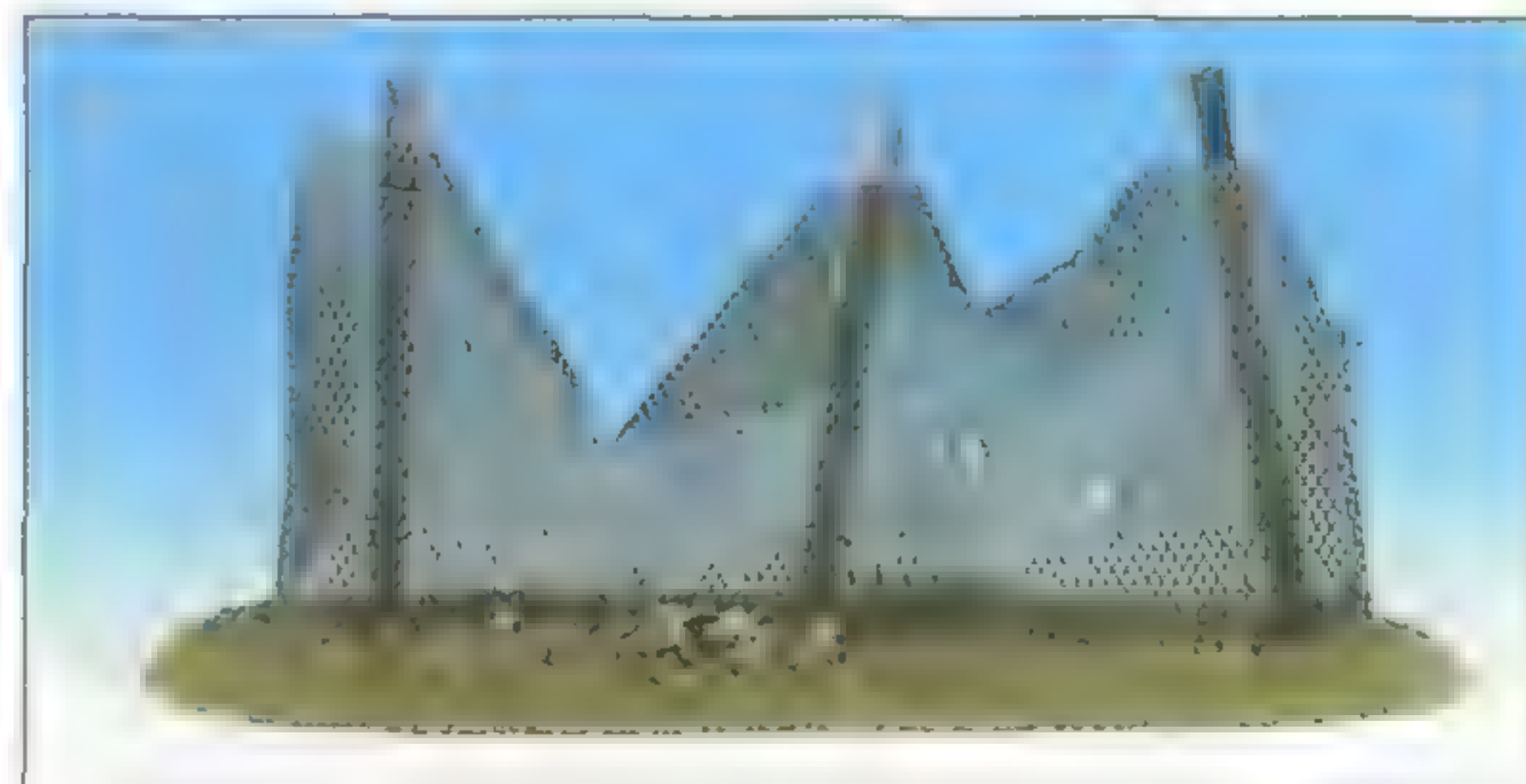
All you need to make a fence is some card and some polystyrene for the bases, anything for the uprights that hold up the fences such as old plastic sprue or strips of plasticard or balsa wood, some textured paint and the mesh itself.

Start by cutting out a card base. Shape the edges slightly so it blends in well with your gaming table. Next, stick a strip of polystyrene to the base (about 15mm thick) and leave it to dry.

When the polystyrene is dry, carefully shape the edges with a sharp modelling knife.

Cut a series of uprights about 15-20mm longer than you want the fence to be. Glue three or four poles into the polystyrene at regular intervals. Make sure the end posts are right at the edge of the card so other fences can join up without leaving gaps.

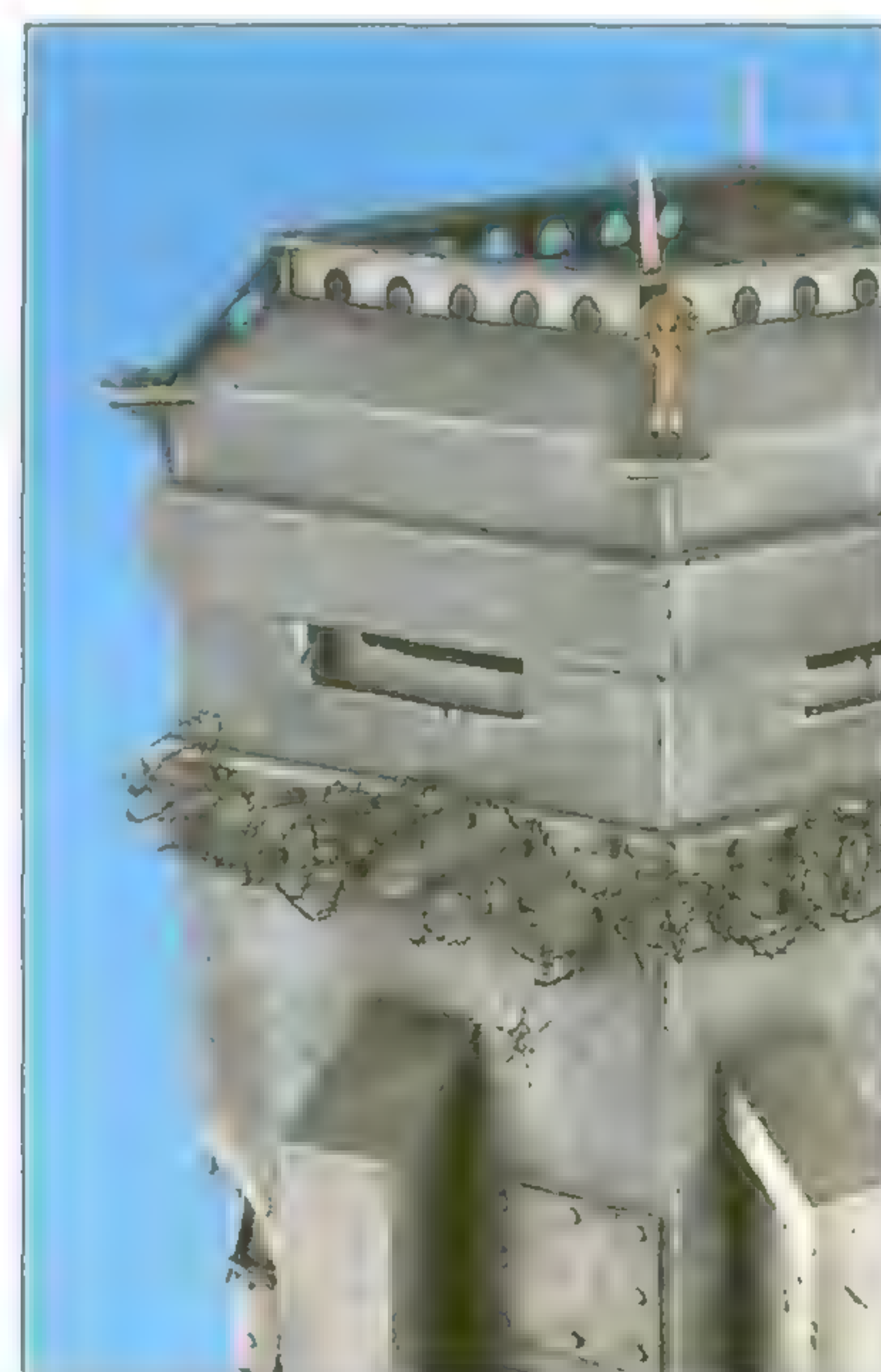
Finally, cut a strip of mesh to the size you want it for your games (50 - 60mm high is about right) and stick it to the poles. When dry, paint the base with textured paint or cover with flock.



RAZOR WIRE

Razor wire look great on the battlefield. It helps if you stick the strips of razor wire to a card base as this prevents them getting bent and damaged.

To make a stretch of razor wire, cut a thin strip of wire mesh and twist it lengthways so the points start to stick out. Then wrap the twisted wire loosely around a pencil to form it into coils. The coils of wire mesh can then be stuck onto a card base.



Wire mesh can be put to use on a multitude of Warhammer 40,000 modelling projects.



RUINED BUILDINGS

The battlefields of the 41st millennium are covered with ruined buildings. Ruins may be human or alien, ancient or new, and provide plenty of opportunity for imaginative modelling. Ruins serve another purpose too, they are essential for providing cover for troops as they move, or shelter while they fire at the enemy.

The easiest and quickest way to make ruined buildings is to make corner pieces. The corners of buildings are often the strongest and tend to last longest when the building is reduced to rubble.

Corner pieces are simply the ruined remnants of two side walls meeting at right angles and provide cover for troops from two sides. If you make four corner pieces you can arrange them to form an entire ruined building.

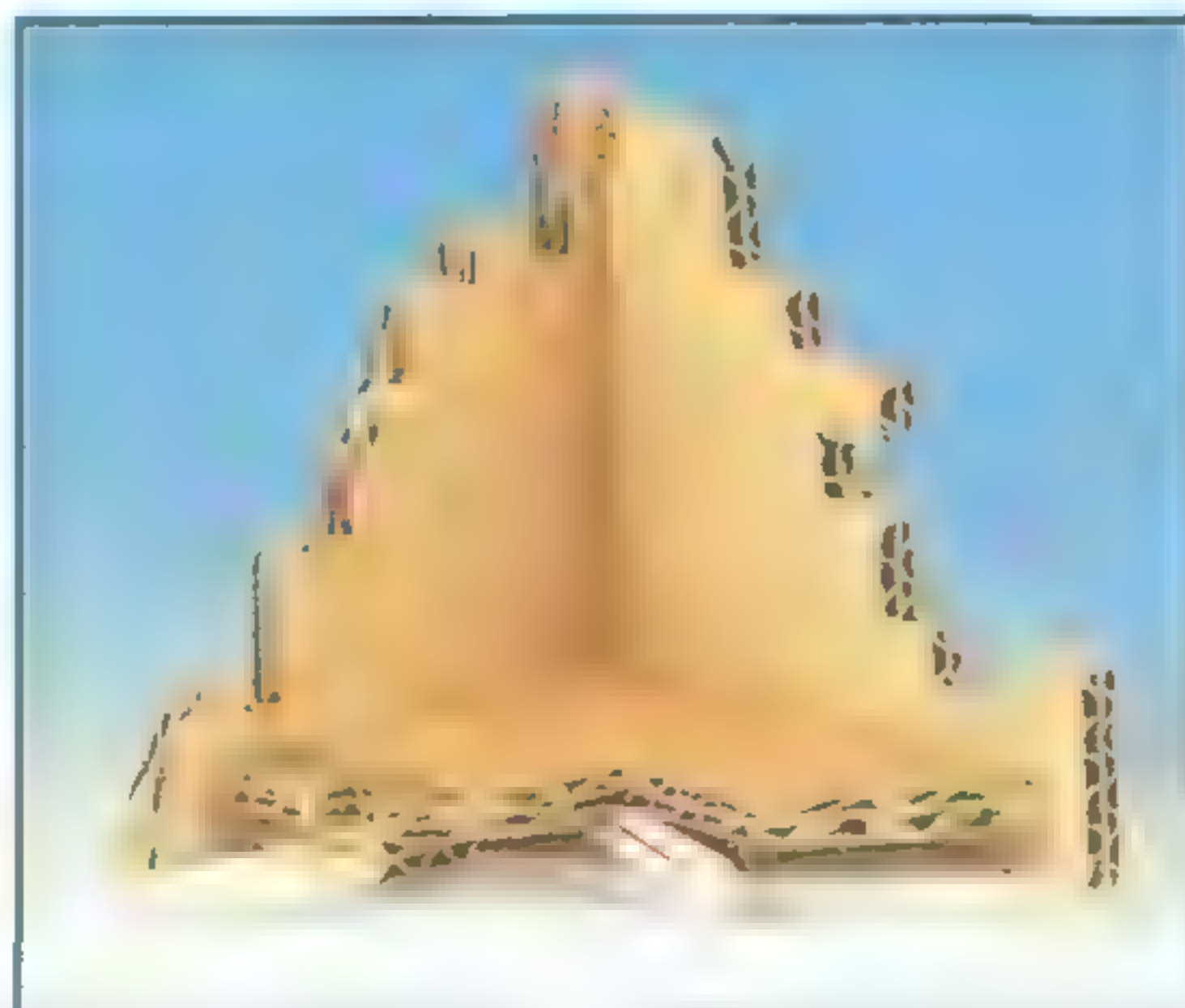
To make a corner piece first cut out a triangular base from sturdy

cardboard. Cut out two more, slightly smaller triangular pieces of thick card, polystyrene, cork tile or balsa wood for the walls. The triangles should be right angled and have at least two straight edges so that the pieces can be easily stuck to the base and to each other at the corner.

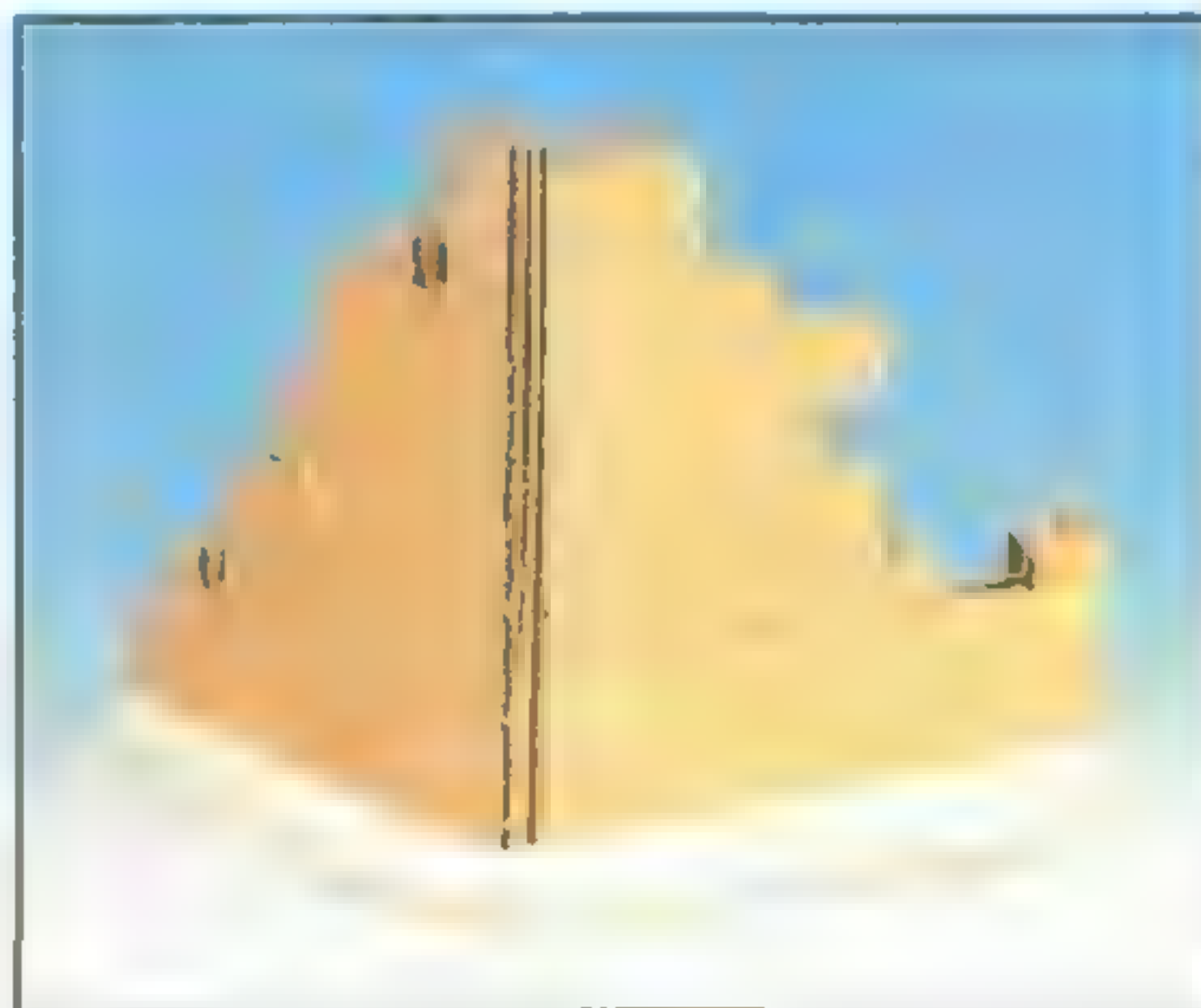
Stick the two walls down onto the base and butt them together to create a corner so that the highest point of the walls is at the corner.



MAKING A CORNER RUIN



The ruin as seen from the front. Straws have been pushed into the base to make exposed pipework.



The ruin seen from the rear. The two card walls butt up neatly to each other, and the edges of the walls have been shaped.



The finished ruin, seen from the rear.



Front view of the finished ruin.

When the walls are firmly stuck in place you can cut out window shapes or just cut a rugged irregular edge along the rest of the walls.

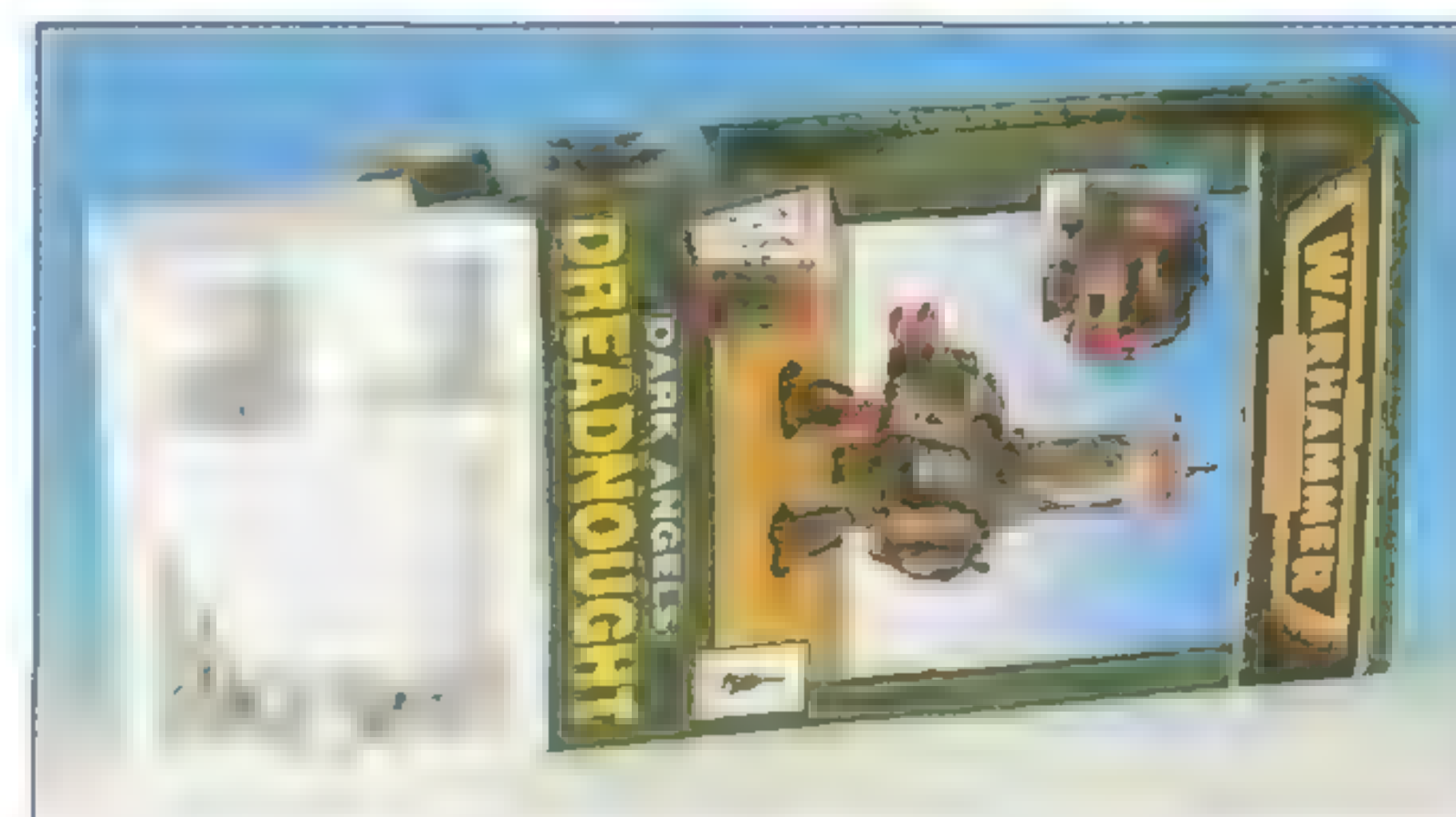
Pieces of thin card can be stuck here and there on the walls and overlapping the corner join to look like stone blocks. Using scraps of thick card, polystyrene, cork tile, stones, grit or balsa wood build up 'rubble' around the walls, leaving a flat space within the corner to place models.

Sand mixed with PVA glue can also be used between the bigger chunks of rubble to bind them down and look like finer rubble dust. Plastic straws stuck into the base look like broken pipes, and bits of wire protruding from the walls will look like exposed steel infrastructure.

When the rubble is firmly in place, paint the entire corner piece to look like the rubble of a building. The effect will be greatly improved by careful drybrushing. At this stage you could drybrush with black to create blast marks and scorch marks on the walls.

MODELLING MASTERCLASS – Making Ruins from Box Inserts

One of the many pleasures of modelling is discovering new uses for all sorts of waste materials. Ian Pickstock has developed an original way of turning the polystyrene inserts from Citadel Miniatures boxes into ruins for his Warhammer 40,000 battlefield.



How many times have you opened a boxed set of miniatures, and, after having a quick peek at your purchases, wondered what you can do with the polystyrene tray? They're such an interesting shape it seems a shame to throw them away. It was after seeing some terrain made by one of our store managers that I decided to have a go at making some ruins myself.

The biggest problem I found was how to stop the inserts looking like polystyrene trays and make them look like ruined buildings.

The photo on the right shows how a ruined Warhammer 40,000 building can be made from a single tray. I started by making a diagonal cut toward one end of the tray. I then took the two pieces and glued them together with PVA glue to

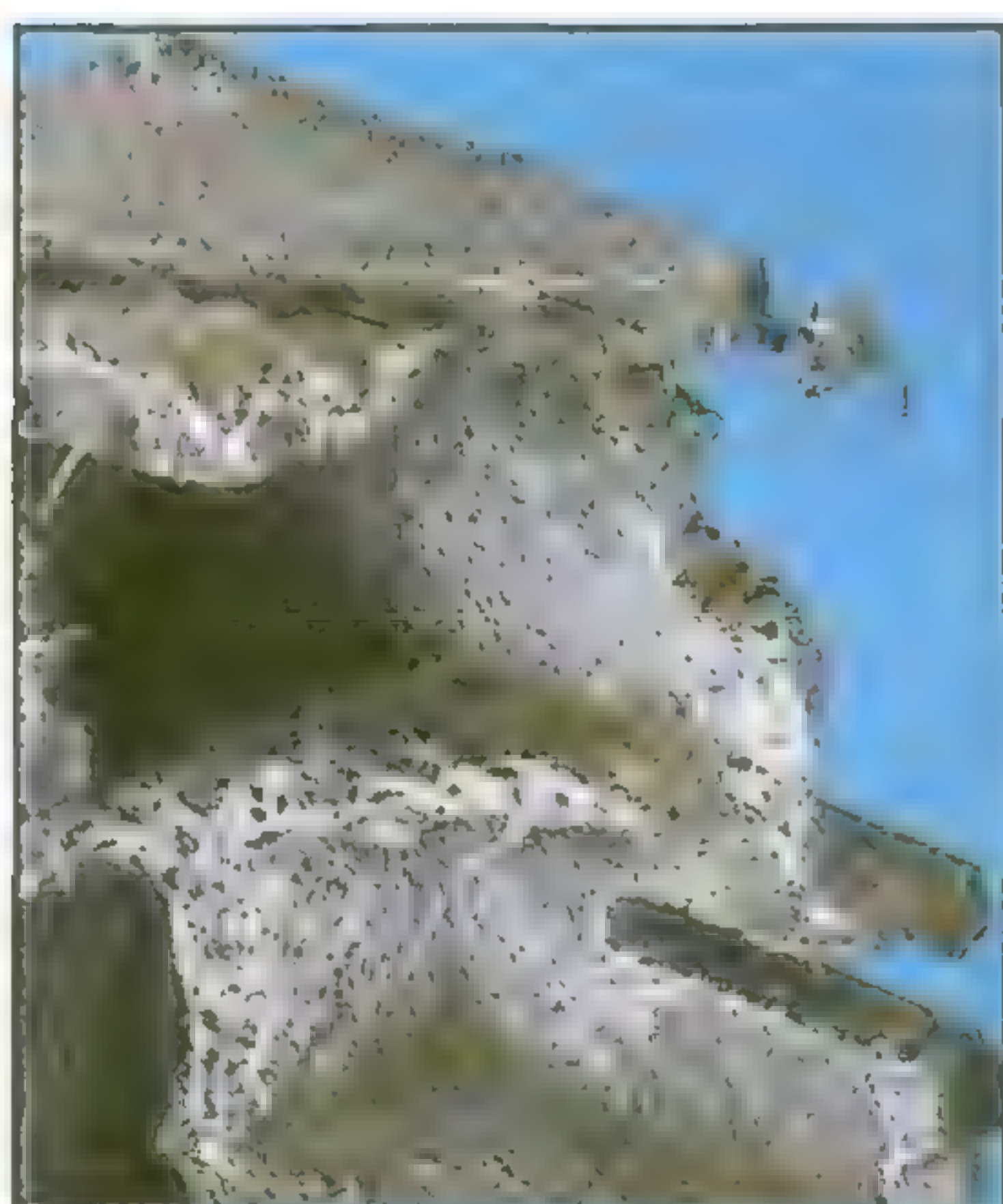
form the corner of the building.

You'll notice that most of the time I stand the trays on their sides, which is a good way of disguising the fact that they are polystyrene trays! Once you've got the basic shape of your building, rough up the edges with a sharp modelling knife to make them look like broken concrete.

Now glue your building to a base, either some thick card or cork tile. At this stage there are all sorts of little things you can do to make your ruin look more like a building. Try cutting squared off shapes into the polystyrene to represent where windows and doors used to be. A square of polystyrene can be used to make door steps and copper/fuse wire can be used to make exposed concrete reinforcing rods.

The concrete feel is achieved by applying a thick coat of textured

This ruin was made from one polystyrene tray.



paint over the entire ruin. I also added coral sand and grit to create piles of rubble in the corner of the ruins.

When everything is dry you can paint the building in the colour of your choice. I opted for a standard Imperial grey colour by first undercoating the walls black then drybrushing with Shadow Grey and Space Wolves Grey. You could decide to do Orky ruins and paint them a sandstone colour - the choice is yours.

That's basically it - pretty simple eh! Once you've made a few basic ruins you can move onto something more complex, a larger ruin made from several polystyrene inserts, like the one shown on the left.

INDUSTRIAL SITE

An industrial site with huge cylindrical tanks and a mass of pipes and gantries makes an excellent and impressive futuristic terrain feature. If you make several you can group them together into a sprawling industrial complex.



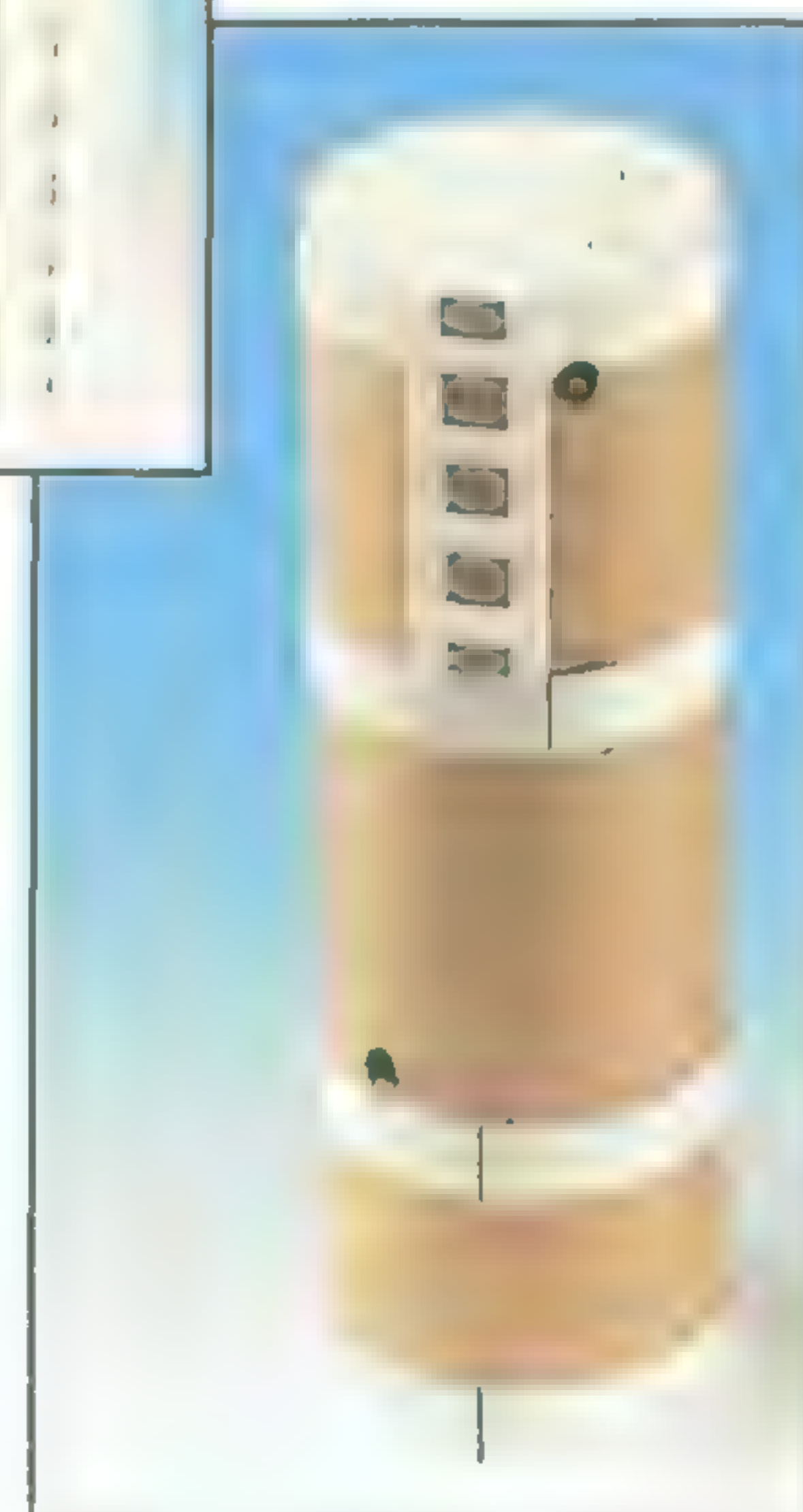
MAKING AN INDUSTRIAL SITE



1 Detailing the square building. The geometric designs were drawn onto the walls first to make it easier to stick them on straight.



Left and below: The two circular towers made made from thick card tubes, detailed with card strips and straws.



2 Left: The square building and the base have been modelled, and it's ready for the two cylindrical buildings to be attached.

When you are making an industrial site you will need to be really imaginative because it is almost impossible to describe what a typical one might look like. They are all different and your model will depend on the materials you have to hand.

Two or three different sized cardboard tubes provide the main raw materials to make such a feature, together with straws or wire and cardboard. The basic elements of the model are the huge upright cylinders, which are made from cardboard tubes. There is no need to cut the tubes if they are already the right length. Draw round the end of each tube on a sheet of thin card to create circular ends to close off the top of the tube. The bottom ends of the tube will be stuck down onto the base and so will not be visible.

Make a base for the model from thick card. The base can be square or rectangular in shape and can feature a raised platform created by sticking polystyrene or layers of thick cardboard onto the base. Stick the ends of the tubes onto this base arranged as you wish. The model will be stronger and more impressive if you stick the tubes together in a row or cluster. Stick the tubes upright with the closed ends at the top.

When the tubes are firmly in place you can detail the model with

THE FINISHED INDUSTRIAL SITE



straws or wire stuck along the sides of the tubes or linking one tube to another as pipelines. You can also add other buildings and structures to the complex. The square building in our complex was made from thick card, decorated with geometric shapes to make it look futuristic.

You could leave the model at this stage or add extra platforms of card or ladders made from cocktail sticks or strips of card to provide places to put models in the game. You could even choose to have a ruined refinery and add rubble.

Finally, paint the model to look like an industrial complex. You can use metallic colours to good effect on the pipes or even on the cylinders. Painted detail could include rust and spilt green chemicals dripping down the sides of the pipes and cylinders. Strange alien lettering also looks good painted on the side of the cylinders.

A good, effective way to paint the site is to use black for most of the model drybrushed with silver and details picked out in other metallic colours.

MODELLING TIP – Working with Polystyrene

Polystyrene is immensely useful for modelling - it is cheap (if not free), light and easy to cut - but can be infuriating to work with. If you decide to use polystyrene for your modelling projects, the following hints should prove useful!

CUTTING Use a very sharp knife to cut polystyrene. Although it's a soft material, polystyrene blunts knife blades extremely quickly, so change your knife blade frequently. Cutting polystyrene with anything other than a sharp knife will result in a huge amount of mess!

Polystyrene cutters (see page 75) are wonderful for carving polystyrene, though you'll need a steady hand to achieve an absolutely straight edge.

Flexible sanding blocks, as sold by hardware stores, are ideal for smoothing down polystyrene, but make an awful lot of mess.

GLUING PVA is the best glue for sticking polystyrene. Do not use superglue or polystyrene cement as these will melt the polystyrene. You can use cocktail sticks to strengthen the joins.

PAINTING Don't use spray paints on polystyrene as the solvent in the paint melts the polystyrene. Water-based paints, like Citadel Colour, are best. To seal the surface of the polystyrene before painting you can paint it with a mix of watery filler. When dry, this provides a slightly rough texture which paints and drybrushes well.

STEPPED PYRAMID

Stepped pyramids rise up in a series of platforms or 'steps' instead of smooth sloping sides. Such pyramids are found in the jungles of Lustria and on various worlds of the Warhammer 40,000 universe. They are often ruined and overgrown with jungle plants and vines. Sometimes the top platform of the pyramid has a ruined temple or an altar on top of it.



The steps of the pyramid provide flat raised platforms for troops to occupy so they are therefore similar to hills in the way they can be used in games.

A stepped pyramid is made in the same way as a stepped hill, but the steps of the pyramid are square, rather than round or oval. Each successive step is smaller than the one below. The steps should allow enough room for bases of models to fit on the platforms, so they should be at least 3cm wide. We made the

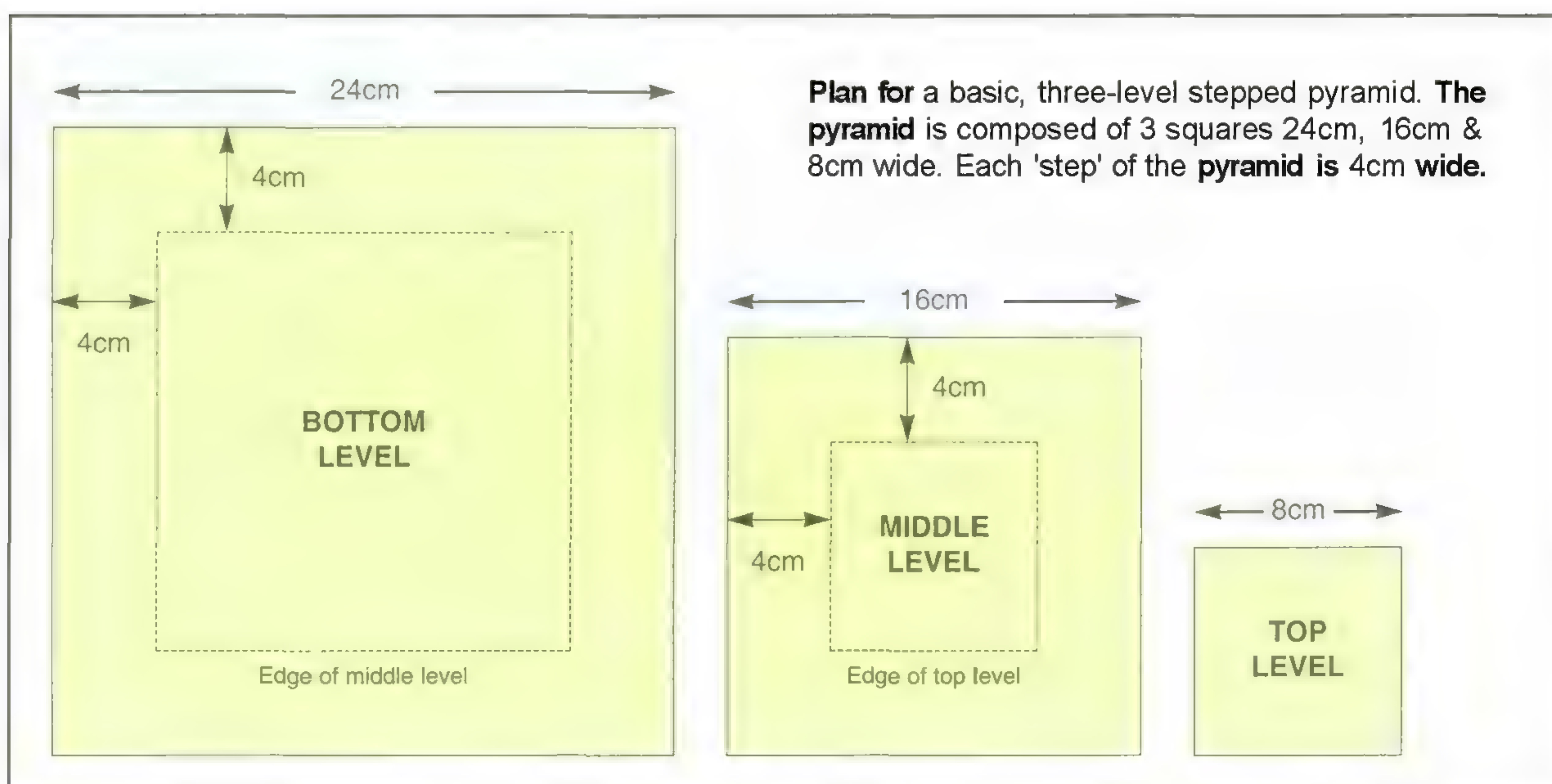
steps of our pyramid 4cm wide to allow plenty of room for manoeuvre.

The pyramid will look most effective if it has several steps - three is about right, though if you're feeling ambitious you could make it higher and steeper!

Before you start, you'll find it helpful to sketch out the levels of the pyramid on a piece of paper. Decide how many levels the pyramid will have, and how wide you want the steps to be.

The height of each level is up to you. We found it easier to let this be determined by the thickness of the materials.

The best material to use for the pyramid is thick polystyrene sheeting, and you will need some thick card or cork for the bases. Cut out the levels of your pyramid from the polystyrene sheeting, and glue each one onto a like-sized cork tile or square of thick card to give it strength and weight.



To make the pyramid look as if it were made from rough blocks of stone, carefully carve the polystyrene with a modelling knife. The corners can also be shaved to give them a more natural, sloping appearance.

After you have shaped each level, texture the surface with filler, and when this is dry, stick the levels together with PVA glue.

When the basic structure is complete, the top of the pyramid can be detailed as you like. We added a strange, futuristic machine, but you could just as well have a small rectangular ruined temple or even a flat altar stone. This is where the priests

would have sacrificed their victims!

The pyramid can have a staircase rising up one side towards the temple or altar. This will be especially useful if the steps are high, so that troops can get up to the upper platforms. To make the staircase, use balsa wood sawn into rectangular blocks about 1cm x 1cm in section and about 3-5cm long. Stick these one above the other in a narrow staircase up one face of the pyramid. You may need to make some steps a double block in width to get the stairs to rise up over the steps of the pyramid. This will look fine and provide stages for troops to be positioned.

The pyramid can be further embellished by sticking tropical plants into the steps. Push the wire stems into the platforms and glue them in firmly. The roots can be textured with modelling clay to look as if they are rooted in the masonry itself.

Heads and other bits of models can be stuck on here and there as carvings, and stonework can be indicated using shapes cut from thin card. Snake carvings to decorate the platforms can be made by rolling modelling clay and making it into coils.

Finally, paint the pyramid to look like weathered stone, perhaps with faded hints of bright coloured paint and glyphs.

MAKING A STEPPED PYRAMID



1 Working on the middle layer of the pyramid. The square edges of the polystyrene have been neatly shaved off to give a sloping edge, then scored with a knife to give the appearance of massive stone blocks.



2 Filler is being applied all over the exposed surfaces, and into the cracks between the stone blocks.



3 The base and middle layer of the pyramid have been glued together. The top level of the pyramid will be glued onto the square of cork tile to keep the model flat and strong.

4 Right: The three layers of the pyramid have been assembled, textured and painted. A strange futuristic machine has been added to the top of the pyramid to finish it off



SPECIAL FEATURES

This section contains a variety of features that show some of the different directions making terrain can take. Many modellers will happily devote months to a project that might consist of one glorious model or a number of pieces of themed terrain. And, to accommodate your growing collection of terrain, why not try making your own gaming table!



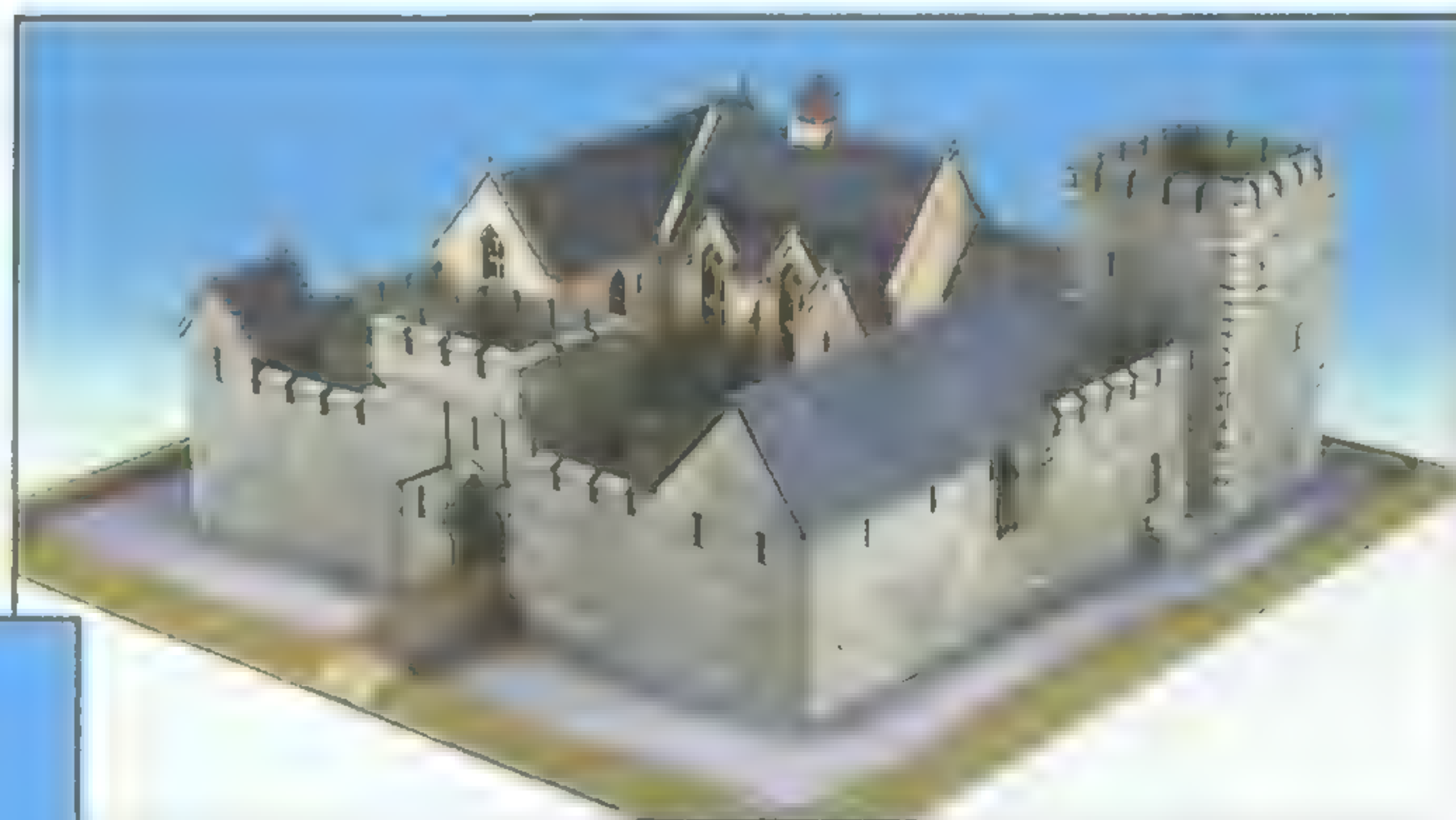
Wood Elf gateway – page 77



Theming Terrain – page 77



Making a
Gaming Table
– page 79



Michael & Alan Perry's castle – page 76



Crashed Spaceship – page 78



Making Modular Terrain – page 80

SPECIALIST TOOLS & EQUIPMENT

As you become more experienced at modelling, and start to tackle more ambitious projects, you will find it helpful to expand your collection of tools and materials. The items we've listed below are a selection of the things that our modellers find particularly useful, if not invaluable!

The best source for specialist modelling tools and equipment is a modelling shop. Even if you're after something specific, it's worth having a good look round just to see what you can find. Lots of equipment and materials are made specifically for railway modellers, and it's often particularly suitable for terrain making.

Specialist tools and materials cost a little more, but the results you can achieve will justify the expense.

MODELLING VICE

Use a modelling vice, or G-clamp, to hold materials steady and firm while you cut, saw or drill them. A G-clamp can also be used to hold pieces in position while you're waiting for the glue to dry.

PLASTIC SHEET

Plastic sheet, or plastikard, comes in many different thicknesses and colours. You can also buy embossed plastikard, which has a pattern or a texture stamped on it. Plastikard has an endless variety of uses, and is an invaluable material for any serious modeller. Plastikard is sold by specialist modelling shops.

PIN VICE

This invaluable tool allows you to drill holes in just about any material, including card, wood and metal. Drill bits come in different widths, allowing you to drill what size holes you want.



POLYSTYRENE CUTTER

This simple tool allows you to cut through polystyrene with amazing ease. The canister contains a battery, which heats up the wire when the cutter is turned on.



HOT GLUE GUN

A hot glue gun is a useful tool for applying adhesive to large or difficult areas. The gun works by heating solid glue sticks until they melt. On application the glue solidifies, holding the materials together.



MOUNTING BOARD

Mounting board, or line board, is a high quality smooth cardboard that comes in a variety of thicknesses. It is perfect for making small and medium-sized bases, building walls and all sorts of detail work. Mounting board is available from stationers and art supply shops.

PLASTIC RODDING

Also known as micro-strip or micro-rod, this flexible plastic rod can be used for all sorts of modelling detail. Rodding comes in a variety of widths and is available in circular, square and rectangular cross-sections. Among other things, rodding can be used for edging architectural features, making railing and detailing machinery. Slices of wide circular rodding make perfect rivets and studs.

FOAM BOARD

Foam board consists of a thin layer of foam sandwiched between two layers of thin white card. It is light and strong, and useful for making building walls.

BRASS-ETCHED FOLIAGE

Several companies produce sheets of fine brass etched with tiny leaves which can be cut out and used for detailed modelling. They can be a bit fiddly to use, but do allow you to add intricate detail to your terrain.



The vines twining round this Wood Elf monolith were made from brass-etched foliage.

SPECIAL PROJECTS

There is no limit to the size and complexity of terrain other than such practical considerations as the time you can devote to making it and storage. Really ambitious projects may take months or even years to complete, but the fantastic results are well worth the effort, and at the end of the project you will have created a truly unique piece of terrain.



Michael and Alan Perry spend all day designing miniatures, but are such enthusiastic gamers that they devote most of their spare time to playing wargames and indulging in ambitious modelling projects. Working in the evenings and at weekends, it took months to make each of these castles.

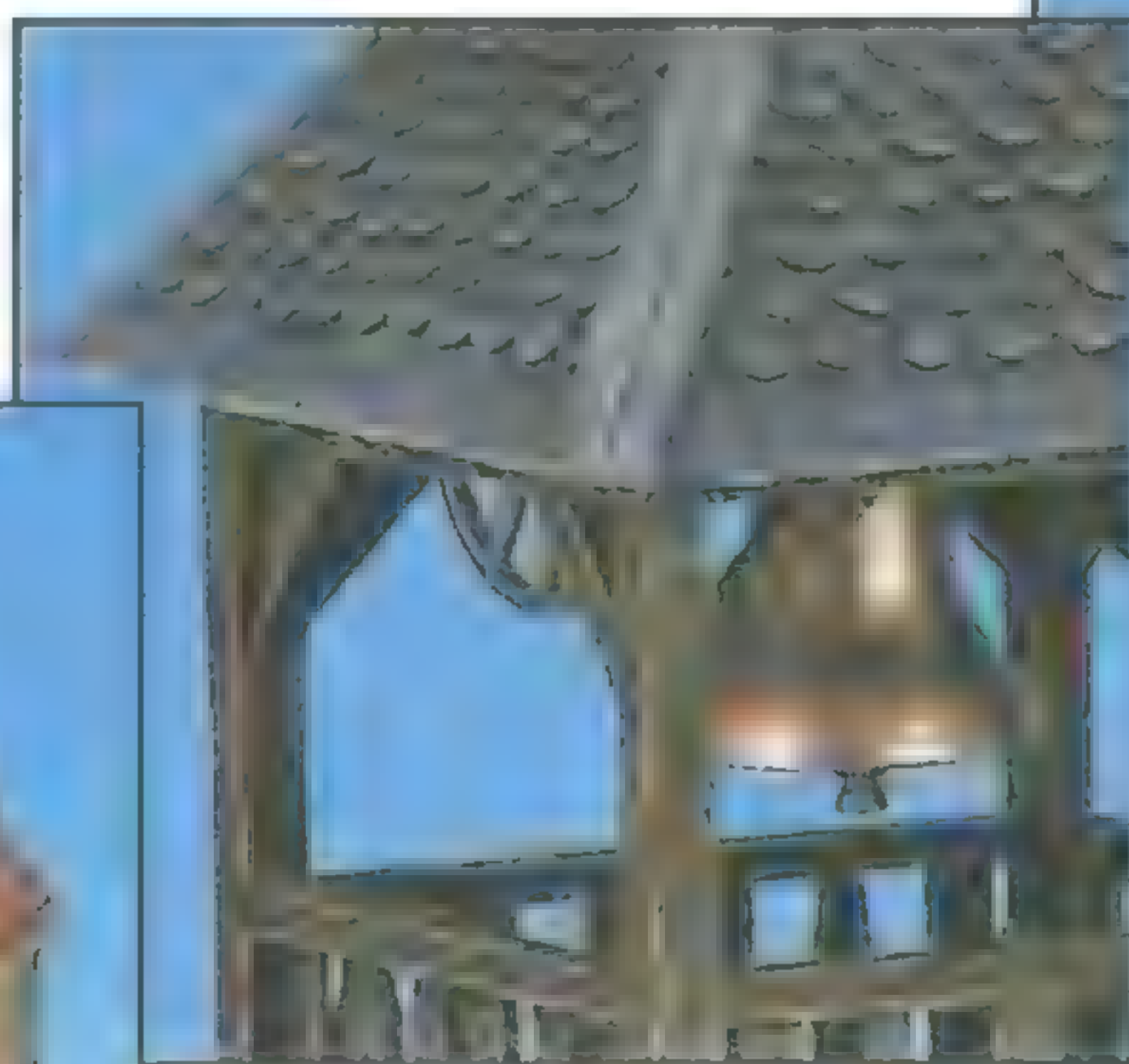


The drawbridge of this castle can be raised and lowered from the roof of the keep.

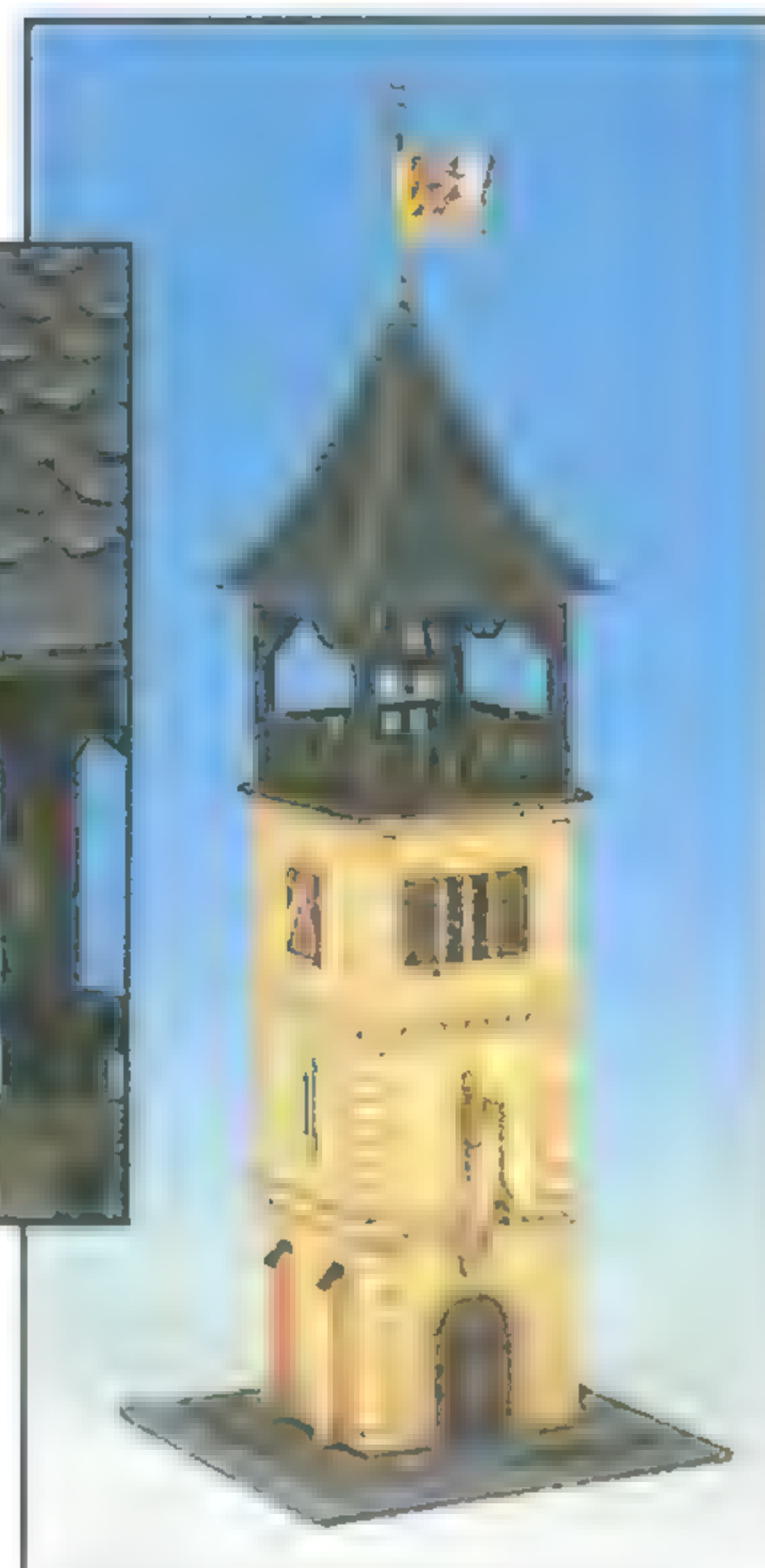


The roofs of the buildings in both these castles can be taken off, allowing models to be placed inside.

Chris Maple specialises in making beautifully detailed model houses. When he sent photographs of his Warhammer buildings in to the studio we were so impressed that we invited him and his models to Nottingham for a photo session.



The bell in the bell tower was made from a Christmas decoration.



THEMING YOUR TERRAIN

Items of terrain can be designed especially to fit in with your army or provide a glorious centrepiece for your battlefield. With patience and imagination you can create a unique masterpiece to grace your gaming table.



Above: This High Elf obelisk was designed to complement a High Elf army.



Above: This magnificent arboreal gateway was made for the Studio's Wood Elf army.



Right: The runes on the tree trunks were made from wire covered with textured paint.



Right: The tiny squirrel hiding deep in the bushes was modelled out of a Citadel Miniatures rat.



This dramatic battle scene demonstrates how themed terrain can be used to create a very distinctive battlefield - in this case the Chaos wastes.

CRASHED SPACESHIP

One of the most ambitious terrain modelling projects we've ever embarked upon at the Studio is a multi-piece crashed spaceship. When it's finished, the wreckage will be used as a focus for our Warhammer 40,000 battles.



Left: The engine section was made from an aluminium drinks can.

Right: Plumbing pipe and all sorts of other bits were used for the landing gear.

Below right: The cargo container was filled with card boxes, plumbers fittings, and odds and ends from Owen's bits box.



The main body of the escape pod was made from a ballcock, and it also involved a number of spare electrical components.



MAKING A GAMING TABLE

Before you start making all of the hills and other scenic features that your troops will fight over, you need something to put them on. There are several ways to make a gaming table, each with its own different advantages and disadvantages, and which method you use is entirely up to you.

A green blanket spread over a table is by far the easiest type of gaming surface to make, short of playing on a bare floor or kitchen table.

You will need:

- a flat surface,
- some books,
- a green blanket or sheet (though you could use any colour you like).

To make your battlefield simply pile your books up in descending order of size, so that they form rough hill shapes. Then all you do is drape the green blanket over the top, and tuck in the edges so that it lies neatly over the books. You can then place any other terrain you have on top. This method is cheap, easy to store and allows you to start playing straight away.

Another simple method is the battle board. This is basically a sheet of wood which you rest on top of a kitchen or dining room table.

You will need:

- Plywood, chipboard or hardboard sheet (about 5-10 mm thick),
- A matt water-based emulsion paint (any colour you like)
- Some paint brushes.

Firstly you need to work out how big you want your board. Measure the size you need and then decide whether or not to cut it into sections for ease of storage. Once you have cut your board to size, sand any rough bits off the edges and paint the board with your chosen colour. You may need two coats as the wood tends to soak up the paint and dull the colour. A good trick is to paint both sides of the board in different colours,

(green and white for example) so that you can alternate between fighting on an ice world and a lush meadow simply by turning the board over.

Lastly there is the most ambitious option: the purpose built games table. To make a large gaming table like this you will need some basic woodwork skills.

For an 8' x 4' table you will need:

- 8' x 4' of hardboard, chipboard or plywood,
- four 1" x 1" x 8' timber struts (to provide a frame).
- a saw,
- green paint,
- plenty of wood screws,
- a screwdriver,
- paintbrushes,
- some all purpose filler,
- a drill

The first thing to do is to make a frame to place your board on. Cut two of the 8' timber slats in half, to give you four 4' battens. You will need to cut off 2" off each one, to compensate for the thickness of the outside frame. Glue and screw the slats together as shown in the diagram so that you have a frame. To strengthen the joints you could screw on some right-angle brackets, especially on the four outermost corners.

Once you have your frame constructed, glue your main board in place on top. Secure the board to the frame using countersunk screws and fill them in with a little filler. Then paint or flock your table as desired. You can now place it on your kitchen or dining room table, but remember to protect the other table by placing a cloth or blanket underneath.



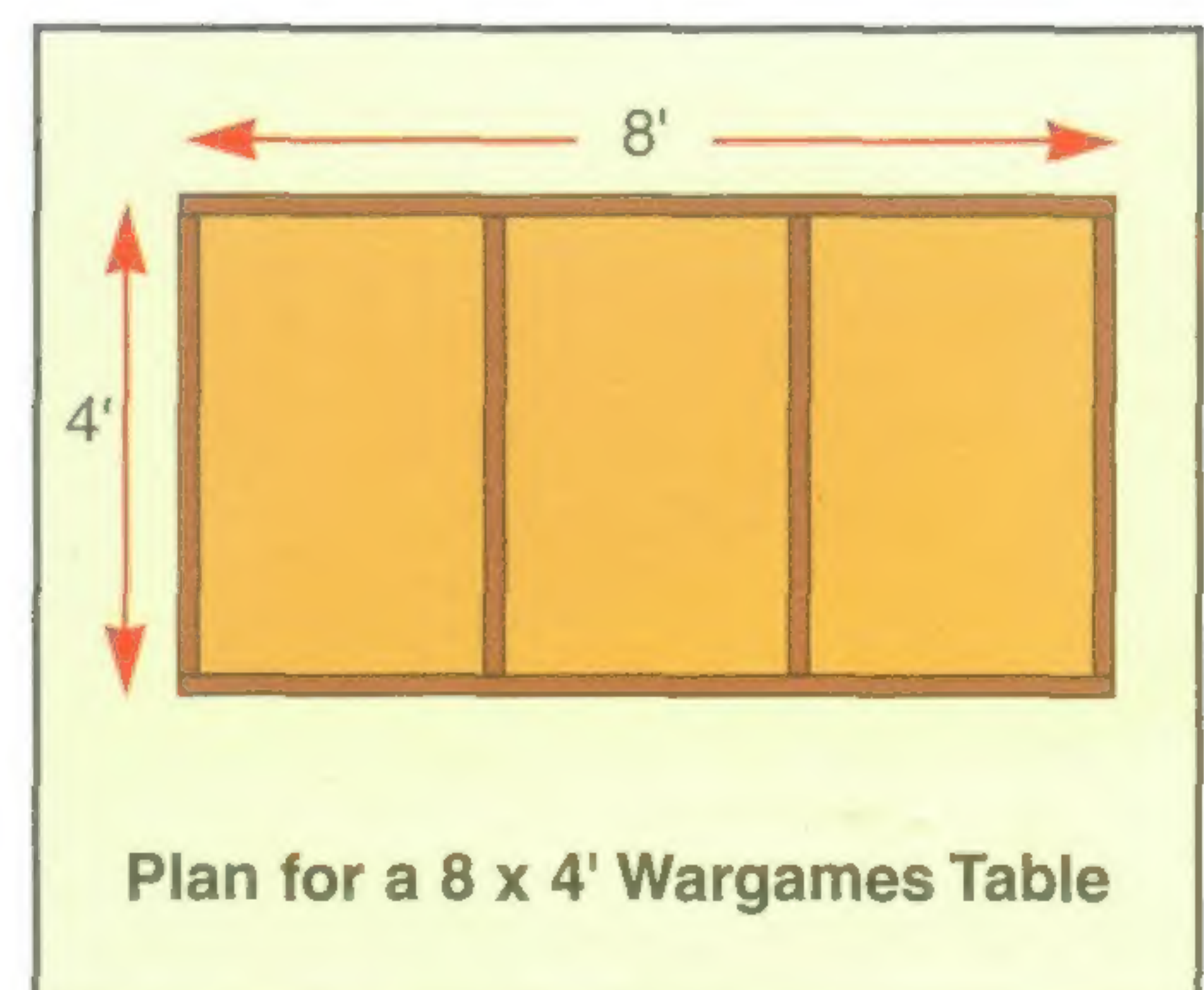
A blanket battlefield. This is the simplest method of providing a gaming surface.



The table in all its glory.



One of the Studio tables - this one is 12'x6'



MODULAR TERRAIN

The easiest way to use scenery is to place terrain on a table which is either painted green or covered with a green cloth. This way you can arrange the scenery to create the landscape you want for your battle. A more advanced method of creating a battlefield is to use modular terrain - large boards with terrain features permanently modelled onto them.

Making modular terrain involves a great deal of careful thought and planning and requires quite a lot of work. Basically, the idea is to have a number of square or rectangular terrain 'modules' which can be placed together on a level surface to create a gaming table complete with terrain features.

The advantage of making modular terrain is that the boards can be built up in thick layers of polystyrene to create large terrain features with a great deal of height and depth. A deep terrain feature cut into the surface of the battlefield - for example a deep ravine with a stream in the bottom - is only possible with modular terrain.

Modular terrain opens up the possibility of modelling river valleys, ravines, gullies, big marshes, sea shores with cliffs, high and rugged mountains, dungeons, trench systems, huge craters, caves and all kinds of dramatic scenery.

The great disadvantage of modular terrain is storing it! On the other hand, modular scenery can be

transported and set up anywhere ready to play on. You can also place separate terrain features on top of modular scenery to create further variation. Well-made modular terrain can be so spectacular that when you see some you won't be able to resist trying to make some yourself!

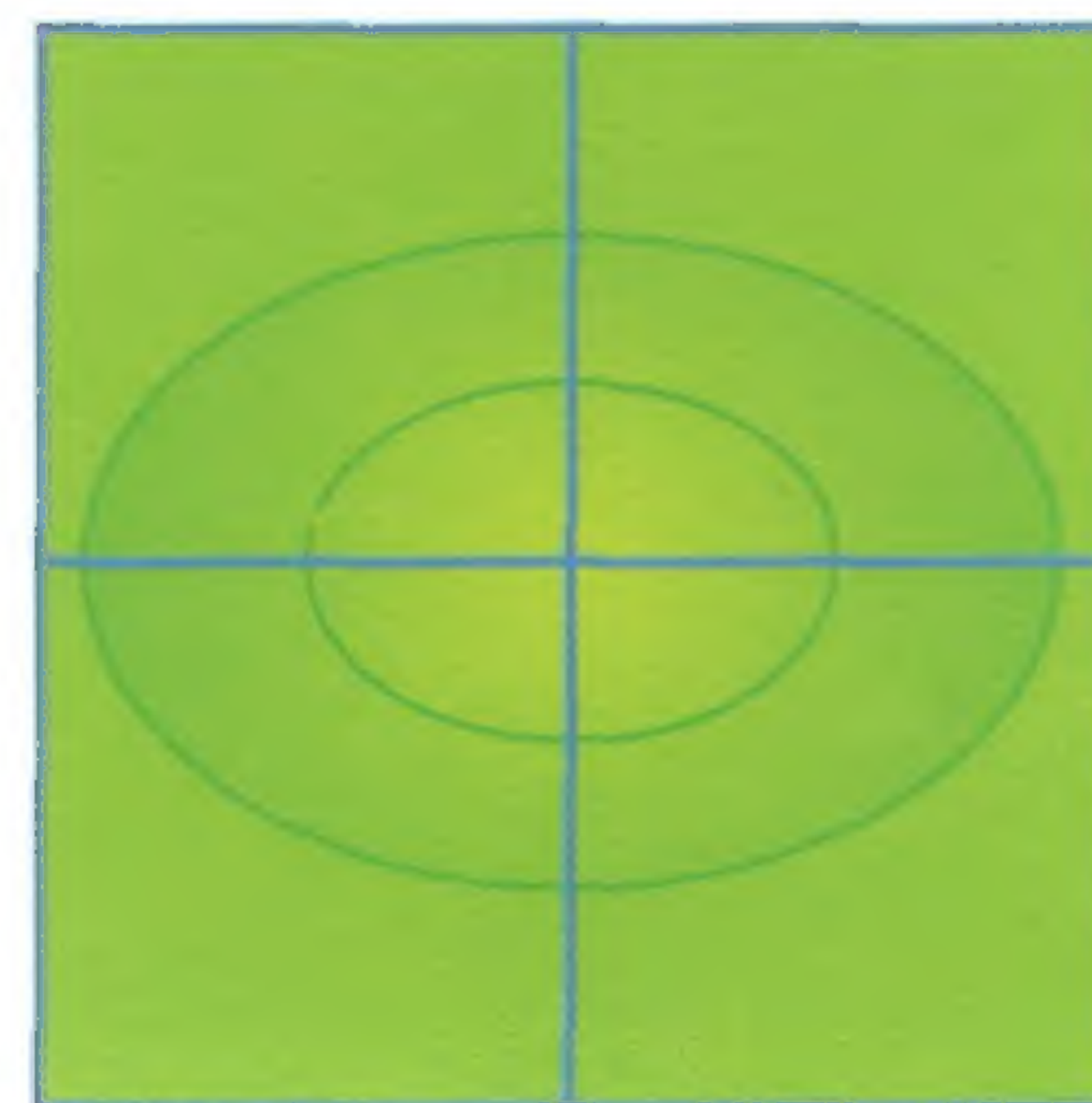
These terrain modules have been made from polystyrene sheeting liberally coated with green flock.



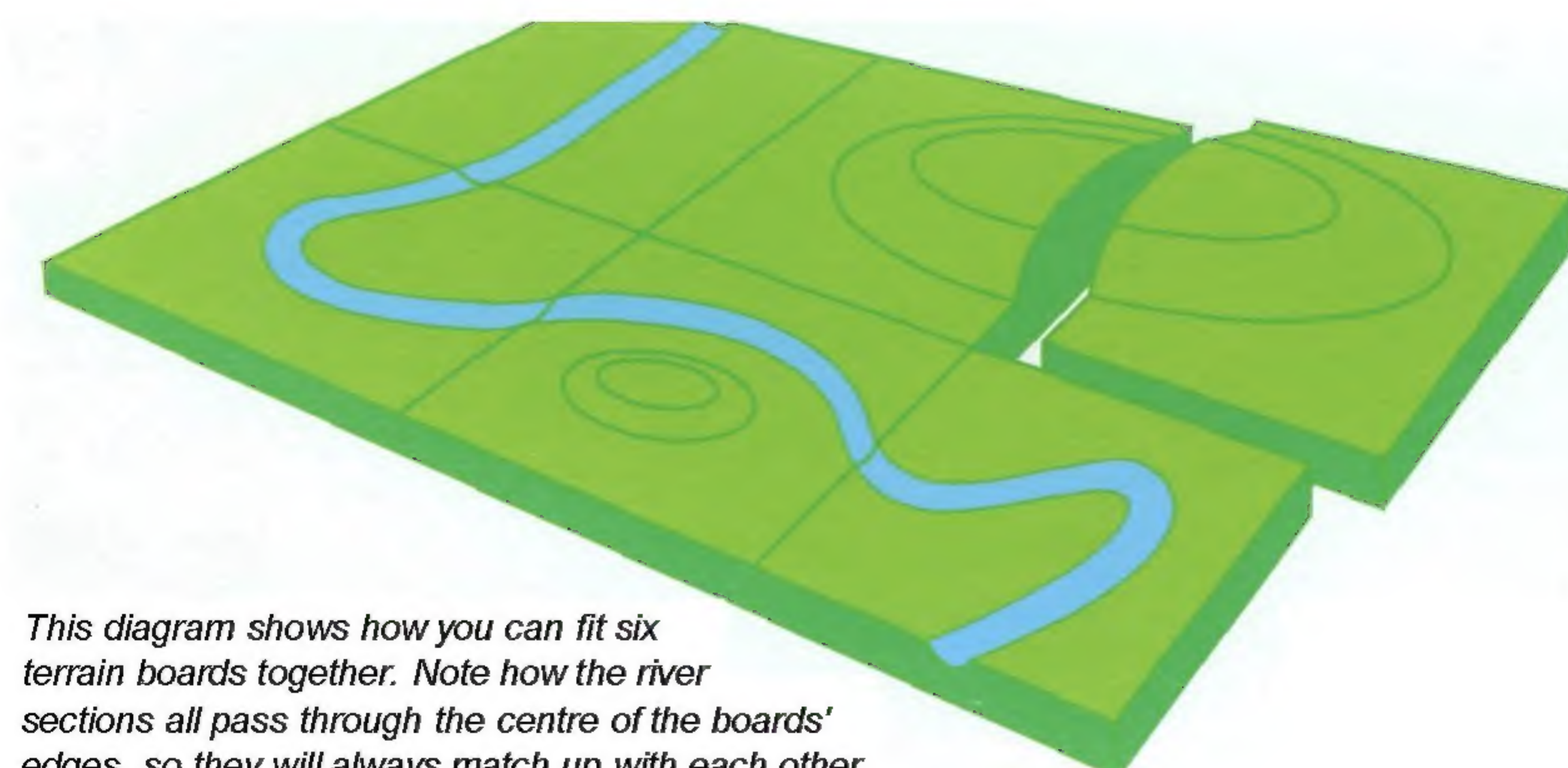
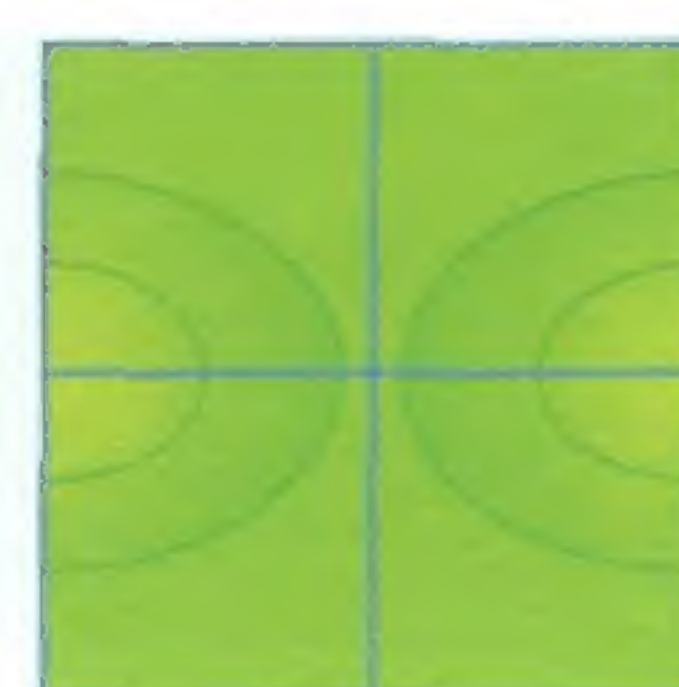
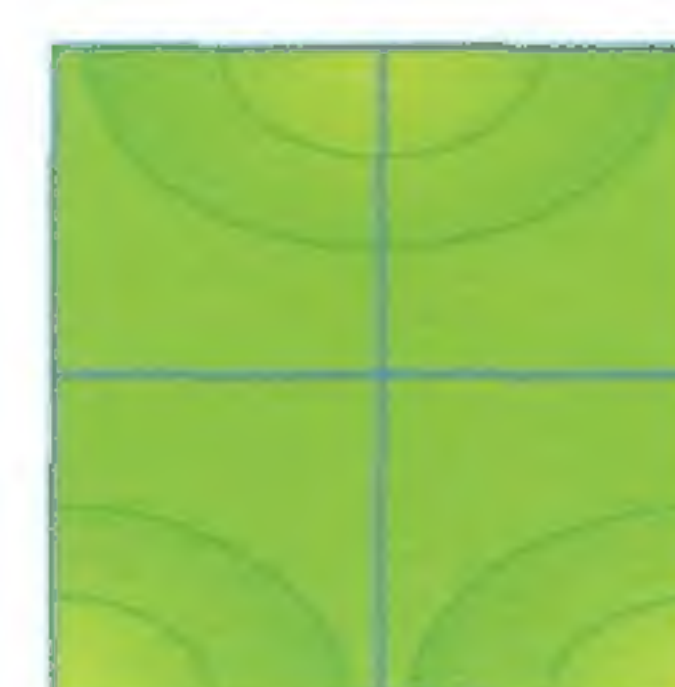
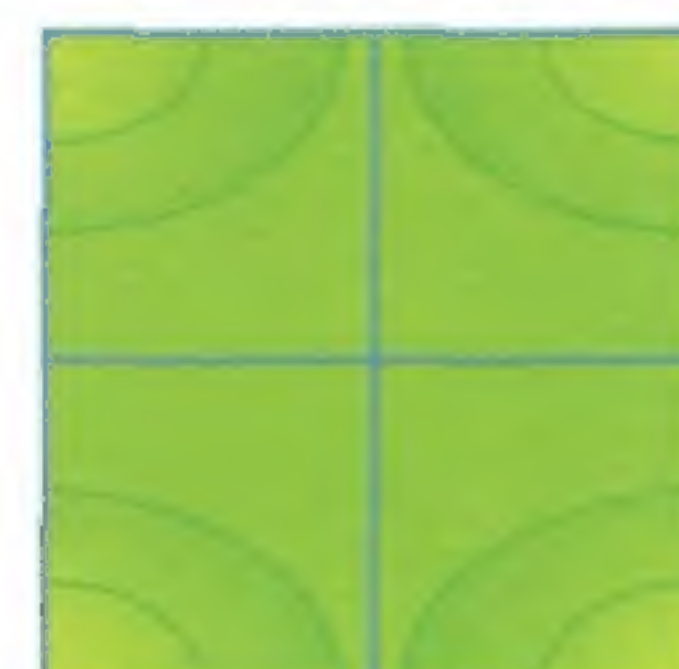
TERRAIN BOARDS

The basic building block of modular terrain is the terrain module itself. In fact, 'terrain board' is a better description because the vital part is a good firm wooden board on which to build the terrain. Most people find that the ideal size for each board is a 2' square. A square will fit together with other equal sized squares in any arrangement. This allows you to re-arrange the modules to create different landscapes while keeping to the basic rectangular shape of your table.

Modular terrain is infinitely adaptable. Four boards with a quartered hill in the middle can be arranged in many different ways, for example.

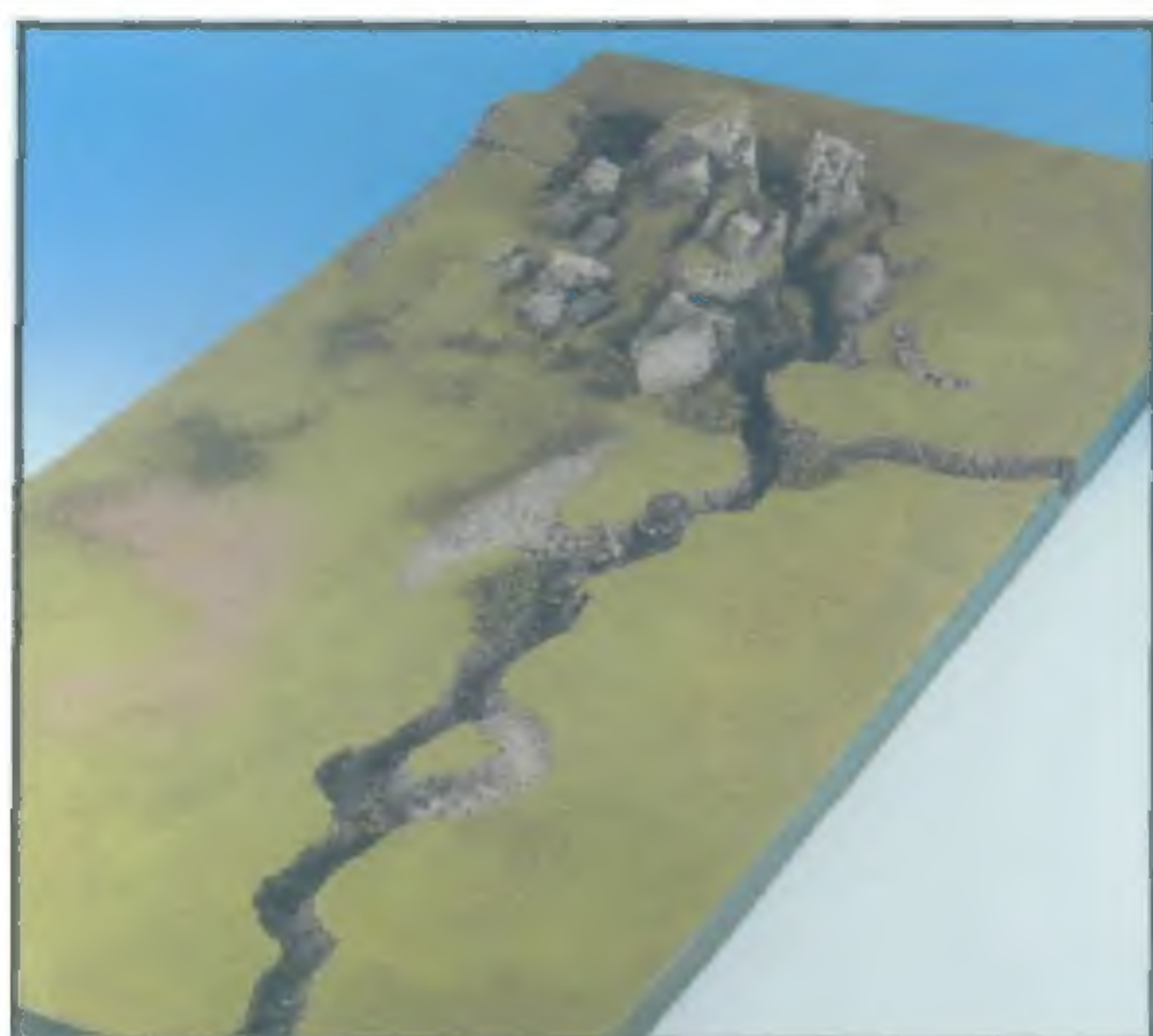


The four hill boards can be arranged together to create all sorts of interesting terrain layouts.



This diagram shows how you can fit six terrain boards together. Note how the river sections all pass through the centre of the boards' edges, so they will always match up with each other.

This large piece of modular terrain is the equivalent of two squares joined together. The rocky terrain is equally useful for Warhammer and Warhammer 40,000 battles.



To cover a 6'x4' table you will need six terrain modules. This will give you a basic set of modules which you can add to later.

The base boards for the modules will need to be fairly thick - sturdy plywood, chipboard or fibre-board are all suitable. A thickness of 10mm is about right. The boards need to be thick enough to support the layers on top and to prevent warping if you intend to apply paint or glue in large amounts directly onto them. You may need to have the boards cut to the right size at a hardware shop or a DIY superstore.

HEIGHT AND DEPTH

If you want to model deep terrain features into the surface of your modules you will need to cover the boards with sheets of polystyrene, though you could use layers of thick cardboard instead. You may only require about one layer of polystyrene or about three or four layers of thick card to raise the level enough to cut a worthwhile stream or ravine into it. Remember to raise the level of all the modules to the same height so that they will fit together properly.

Having established your 'surface' with enough depth below to cut deep features into it, you can add extra layers to create higher ground. To do this proceed exactly as you would to make hills.

Deep features are more of a problem and require a bit of forethought. Rivers, ravines and similar features need to match up

with each other or align with a table edge when the modules are placed together.

Cutting out deep features can be difficult and it is usually easier to sculpt the contours of the feature before sticking the polystyrene layers onto the base board. It's a good idea to draw the shapes onto the polystyrene before you start cutting out.

SURFACE TEXTURE

When you have created your modules you will need to apply a surface texture. Textured paint is the best stuff to use, and you will need a big tub of it applied in several layers. An alternative is to paint it green and cover it in flock, or use grass matting from model shops. You can use a combination of all these methods to vary the effect over the boards.

MIX AND MATCH

You will need to plan your modules so they fit together in as many ways as possible. One way is to restrict terrain features to one board, so that a river runs across a board from one edge to the adjacent edge, for example. However, two of the great advantages of making modular terrain are that you can create really big hills that go over two or more modules, or design long rivers that meander all the way across the battlefield.

If you want a really big hill, you will need two modules with half a hill on each. Used separately they can butt up against the table edge. You will need to ensure that the hill slopes match up exactly when the two modules are put together.

The best place for rivers, gullies, trenches and roads to leave the edges of the modules is midway along the edge so you can be sure that they will match up at least on the majority of your battlefields!



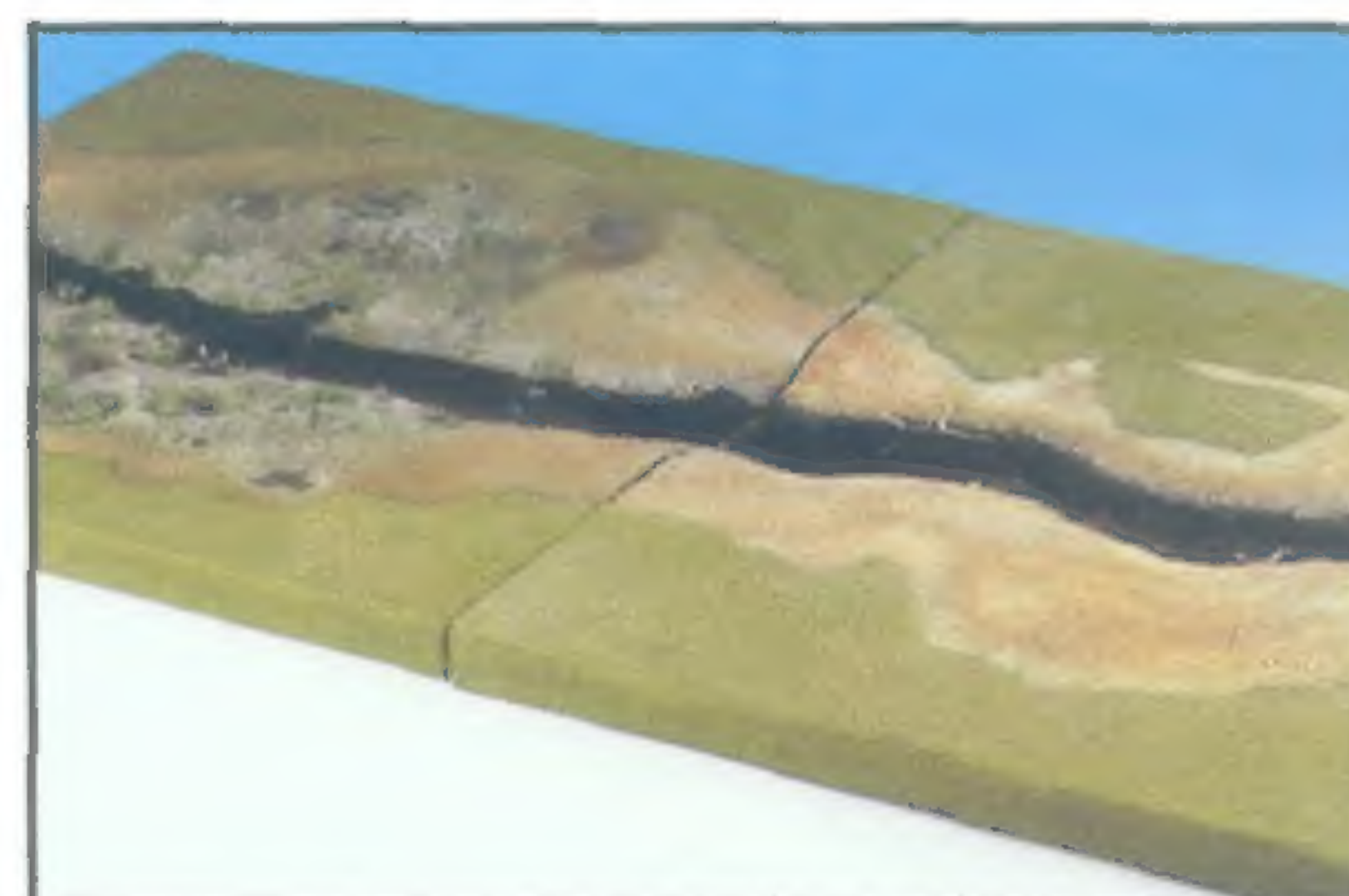
This river bend was designed so it matches up with other straight river sections.



A section of sea coast



This terrain board features a deep river winding through hilly countryside.



These river sections were made by Alan and Michael Perry. The flocked edges blend in with all their other modular terrain.



Ian gets to work on his modular terrain boards. The basic shapes of the hills were cut out with a polystyrene cutter before being stuck to the base board.

WARGAMES TERRAIN

Nothing looks better than a gaming table crammed with exciting scenery. This book shows you how to design and make terrain for wargames. Using simple techniques and readily available materials, you can produce all sorts of models from simple woods and hills to amazing fantasy castles and the cratered battlegrounds of the far future.



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